

Simpson Road Corridor Redevelopment Plan Update

Transportation Assessment and Recommendations



City of Atlanta
Bureau of Planning

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**Simpson Road Corridor Redevelopment Plan Update
Transportation Assessment and Recommendations
June. 2006**

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1. Existing Conditions Inventory

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Introduction

As part of the Simpson Road Corridor Redevelopment Plan Update, this report provides an assessment of existing transportation facilities and operational conditions. The results of the existing conditions analysis will be used as a basis for the development of recommended transportation improvements.

Study Area Overview

The Simpson Road Redevelopment Plan Update study area is 4.2 miles in length. The study area's western terminus is Hamilton Holmes Road and the eastern terminus is Northside Drive. The Simpson Road Corridor lies immediately west of Midtown and Downtown Atlanta. The study area is entirely within the City of Atlanta and Fulton County, in the State of Georgia.

Roadway Network Overview

The existing transportation system within the Simpson Road Redevelopment Plan Update study area includes a network of state and local roadways serving residential, business and regional transportation needs. The roadway network is illustrated in Figure 1.

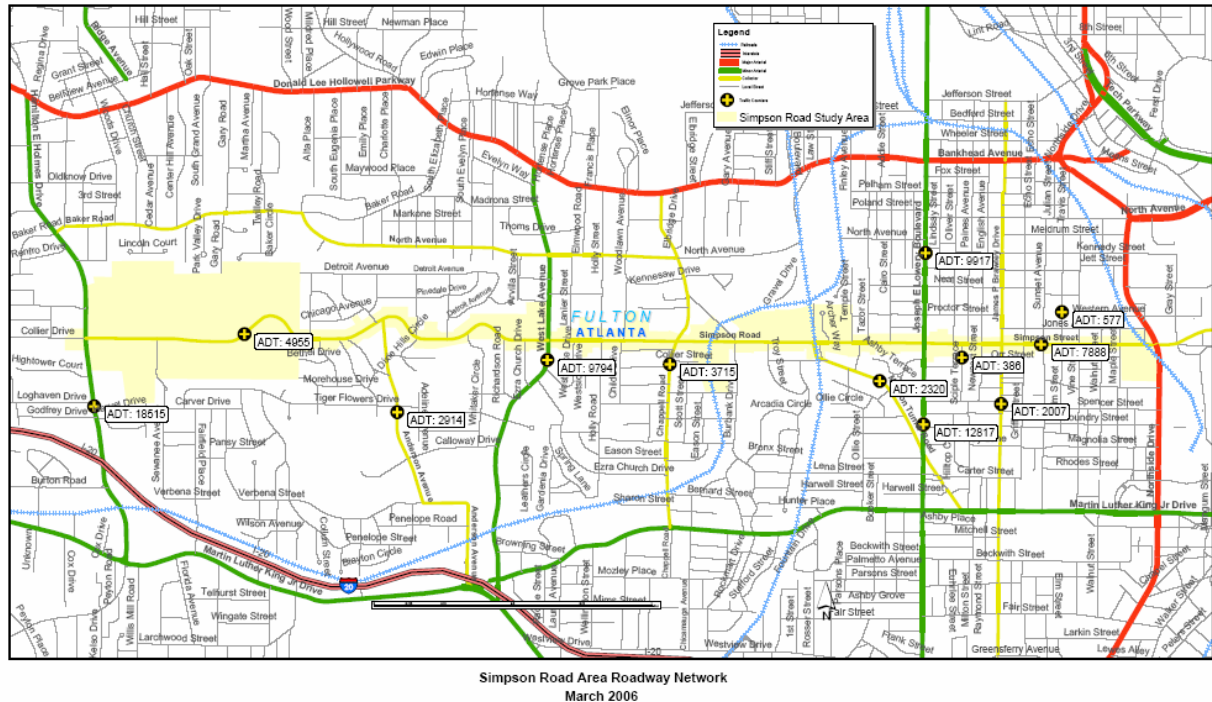


Figure 1: Existing Roadway Network and Average Daily Traffic Volume Counts

Simpson Road, the spine of the corridor, is actually known as Simpson *Road* only west of the MARTA Rail corridor which bisects the corridor between Temple Street and Troy Street. To the east of the MARTA corridor, Simpson is known as Simpson *Street*.

The Simpson Road Corridor is characterized by three distinct roadway cross-sections:

- From Hamilton Homes Drive to West Lake Avenue, Simpson Road has an average width of approximately 24 feet from curb to curb with two travel lanes. With the Exception of the intersection of Hamilton Holmes, there are no turn lanes, left or right, on this section of Simpson Road.
- From West Lake Avenue to Joseph E. Lowery Boulevard, Simpson Road has an average width of approximately 34 feet from curb to curb with either two travel lanes and an alternating left turn lane, or with two westbound travel lanes and one eastbound travel lane.

- From Joseph E. Lowery Boulevard to Northside Drive, Simpson Road has an average width of approximately 44 feet from curb to curb with two travel lanes in each direction and no turn lanes.

The road system is currently in fair condition, although many aspects of the Simpson Road corridor do not comply with current design and safety standards, including traffic controls, curb and gutter, and utility locations. Safety improvements are needed in particular at key intersections where there are a high number of vehicular and pedestrian accidents.

Several cross streets facing the Simpson Road Corridor, particularly Newport Street, Sunset Street, Elm Street and Vine Street in the English Avenue neighborhood, lack adequate width to provide for safe vehicular operations in their current configuration due to narrow widths and tight turning radii.

The portion of Simpson Road west of West Lake Avenue is characterized by significant curves and changing grades, which creates problems with both vertical and horizontal line of sight, contributing to decreased safety at some driveways, intersections and crosswalks in this section of the corridor.

With some exceptions, there is generally good north-to south access across the corridor. The roadway network, which is essentially a rectilinear grid, is broken in two areas. Between Chappell and Joseph E. Lowery, several rail corridors breaks the continuity of the road network, limiting north-south accessibility. In the 1.6 mile long portion of the corridor between West Lake Avenue and Hamilton Holmes, there is no north-south access between Simpson Road and areas to the north of the corridor.

The Simpson Road Corridor functions as a de facto east west thoroughfare, although with relatively low traffic volumes. As a thoroughfare, it is paralleled by three much higher functioning parallel thoroughfares: Donald L. Hollowell Parkway to the North, and Martin Luther King Boulevard to the South, both major arterials, and the Interstate 20 Freeway to the South. Donald L. Hollowell Parkway is currently programmed to be widened to a continuous four lane road from Interstate 285 to Northside Drive, and upgraded by GDOT, which is likely to have the effect of making it a more attractive thoroughfare to east-west commuters, and thus lessening the relative attractiveness of Simpson Road as a thoroughfare and reducing traffic volumes.

Roadway Functional Classification

Roadways within the Simpson Road Redevelopment Plan study area are classified by GDOT as follows:

Interstate Freeways:

- None. Interstates 75 & 85 are 1 mile to the east of the Study area and Interstate 20 is from ½ mile to 2 miles to the south.

Principal Arterial Streets

- Northside Drive (US 19/41)
- Donald L. Hollowell Parkway (US 78/278)

Minor Arterial Streets

- Joseph E. Lowery Boulevard
- West Lake Avenue
- Hamilton E. Holmes Drive

Collector Streets

- Simpson Road
- James P. Brawley Drive
- Mayson Turner Road (South of Simpson)
- Chappell Road
- Anderson Avenue

Local Streets

- All other Streets

Traffic Controls

The Simpson Road Corridor contains 10 signalized intersections.

On Simpson Road, traffic signals are located at the intersections of:

- Hamilton E. Holmes Drive
- West Lake Avenue
- Holly Road
- Chappell Road
- Mayson Turner Road
- Troy Street
- Tazor Street
- Joseph E. Lowery Boulevard
- Sunset Avenue
- Northside Drive

Pedestrian Facilities

The Simpson Road Corridor's Sidewalk inventory is as follows:

- 1.9 linear miles, or 45% of the corridor currently has sidewalks consistently on both sides of the road.

- 1.8 linear miles, or 43% of the corridor currently has sidewalks consistently on one side of the road or sporadically on both sides of the road.
- 0.5 linear miles, or 12% of the corridor has no sidewalks.

Much of the existing sidewalk inventory is substandard in terms of width, pavement condition, the presence of impediments to accessibility, and ADA compliance.

West of Chappell Road, significant grade issues limit the amount of graded right of way, and any new sidewalks in this area are likely to require either space from the existing travel lane or additional grading and possible retaining walls.

All of these signalized intersections are equipped with pedestrian signal heads and painted crosswalks, and only one (Sunset Drive) lacks pedestrian crossing amenities across all legs of the intersection.

Much of the corridor's existing sidewalk inventory does not conform to current safety and accessibility standards due to limited sidewalk widths and the presence of utility poles within the sidewalk which inhibit pedestrian and wheelchair travel

Figure 2 illustrates pedestrian issues along the corridor, including a sidewalk inventory and the locations and frequencies of accidents involving pedestrians between 2000 and 2002.

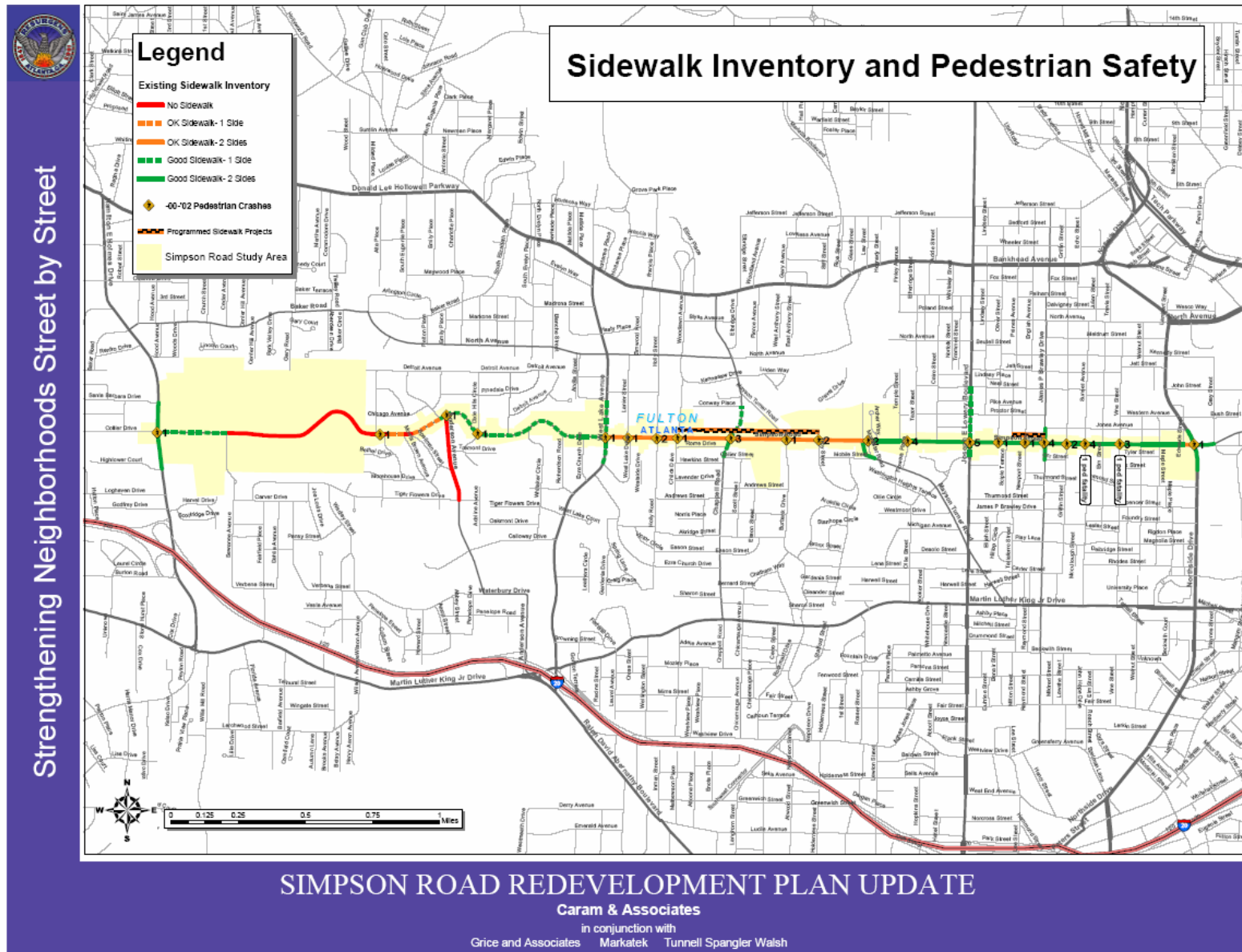


Figure 2: Existing Sidewalk Inventory and Pedestrian Crashes

Transit

Transit service in the Simpson Road Redevelopment Plan study area is provided by the Metropolitan Atlanta Rapid Transit Authority (MARTA). A map of transit services in and near the Simpson Road Corridor study area can be seen in Figure 3.

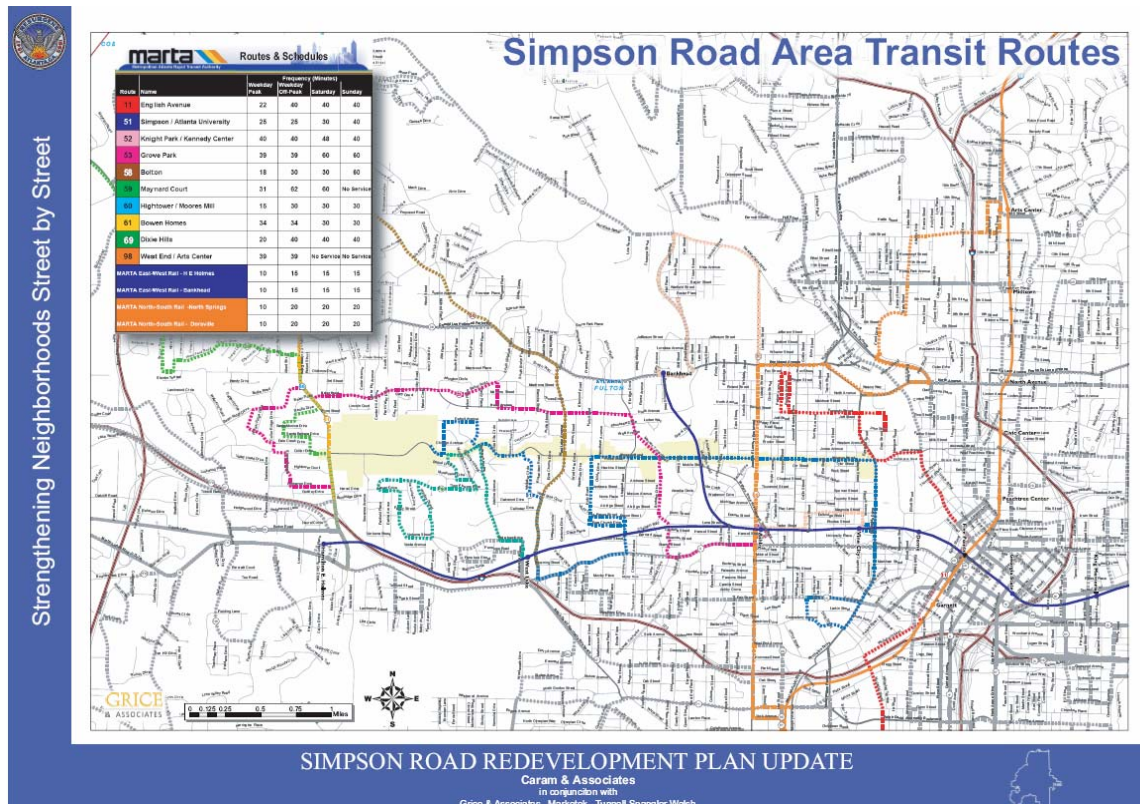


Figure 3: Simpson Road Area Transit Options (Source: MARTA)

MARTA Rail

The MARTA rail system currently has 36 stations with 46 route miles. MARTA carries about 250,000 rail passengers on weekdays. MARTA's rail system operates from approximately 5 A.M. to 1 A.M. Monday through Friday and from 5 A.M. to 12:30 A.M. weekends and holidays. The fare for a single ride is \$1.75.

While there are no Marta Rail stations immediately within the Simpson Road Corridor, there are 10 stations within 1 mile of the corridor. The closest stations, by road-miles from the Simpson Road Corridor Study area are:

<u>MARTA Line</u>	<u>Station</u>	<u>Distance</u>
All	Five Points	0.8 Miles
East-West	Georgia Dome	0.5 Miles
East-West	Vine City	0.4 Miles
East-West	Ashby	0.5 Miles
Proctor Creek	Bankhead	0.6 Miles
East-West	West Lake	0.7 Miles
East-West	Hamilton Holmes	0.6 Miles
North-South	Peachtree Center	0.6 Miles
North-South	Civic Center	0.5 Miles
North-South	North Avenue	0.7 Miles

The BeltLine Redevelopment Plan has recommended that a new infill MARTA Rail station be built on the Proctor Creek Line at Simpson Road, which would be a transfer station with the Proposed 22-Mile BeltLine Transit system.

MARTA Bus

The Simpson Road study area is served by 10 MARTA bus routes. Their weekday schedules and operating statistics are shown in Table 2.

Table 1: MARTA Bus Weekday Operating Statistics (Source: MARTA)

Route	Name	Weekday Peak	Frequency (Minutes)		
			Weekday Off-Peak	Saturday	Sunday
11	English Avenue	25-40	45	35	35
51	Simpson / Atlanta University	25	25	30	40
52	Knight Park / Kennedy Center	40	40	50-60	50-60
53	Grove Park	35-40	70	60-70	60-70
58	Bolton	25	30	30	60
59	Maynard Court	31	62	60	No Service
60	Hightower / Moores Mill	15	30	30	30
61	Bowen Homes	34	34	30	30
69	Dixie Hills	20	40	40	40
98	West End / Arts Center	39	39	No Service	No Service
MARTA East-West Rail - H E Holmes		10	15	15	15
MARTA East-West Rail - Bankhead		10	15	15	15
MARTA North-South Rail -North Springs		10	20	20	20
MARTA North-South Rail - Doraville		10	20	20	20

MARTA Route 59 does not operate on Sundays. MARTA Route 98 does not operate on Saturdays or Sundays. All other routes operate 7 days a week, with longer headways on weekends.

Bus stops in the Simpson Road corridor generally lack amenities such as sidewalks, concrete pads ramps, shelters and benches.

Transit routes and operations in the Simpson Road Corridor are generally feeder routes designed to connect riders in a within the area to MARTA rail stations. The benefit of this route structure is that most locations throughout the corridor are within a short walk of the nearest MARTA bus stop. The cost of this convenience however, is longer headways between buses, longer travel times, and an increased likelihood of transfers for a typical transit trip. There is currently no MARTA bus routing which provides direct or continuous service along the Simpson Road Corridor, to downtown Atlanta, or to any major activity center.

Vehicular Crash Analysis

Vehicular crashes in the Simpson Road Redevelopment Plan study area were researched using GDOT crash records from 2000 through 2002. Crash volumes were calculated for all intersections in the study area. Tables 2 through 4 and Figures 4 and 5 depict the results of the crash analysis.

The intersections with the highest numbers of crash incidents over the 2000-2002 study period include:

Crash Statistics: Simpson Road Corridor							
Street_1 Street_2		Annual Crashes			2000-2002 Annual Averages		
		2000	2001	2002	Incidents	Fatalities	Injuries
Simpson Rd	Hamilton Holmes	29	33	29	30	-	17
Simpson Rd	Northside Dr	28	31	17	25	-	7
Simpson Rd	J E Lowery Blvd	30	21	22	24	-	15
Simpson Rd	West Lake Ave	19	15	5	13	-	6
Simpson Rd	Mayson Turner Rd (N)	9	12	7	9	-	5
Simpson Rd	Chappell Rd	12	8	8	9	-	5
Simpson Rd	JP Brawley Dr	9	7	8	8	-	4
Simpson Rd	Lanier St	12	7	5	8	-	6
Simpson Rd	Sunset Ave	8	6	7	7	0.33	4
Simpson Rd	Holly Rd	4	7	10	7	-	4
Simpson Rd	McAllister Rd	4	9	6	6	-	2
Simpson Rd	Griffin St	4	9	5	6	-	4
Simpson Rd	Troy St	6	8	4	6	-	4
Simpson Rd	New Jersey/Aurora	3	9	3	5	-	2
Simpson Rd	Temple/Tazor/Flowers St	4	6	4	5	-	1
Simpson Rd	Whittaker Cir	3	7	4	5	-	5
Simpson Rd	Anderson Ave	6	4	4	5	-	3

Table 2: Simpson Road Corridor: Overall Crashes at Intersections (Source: GDOT)

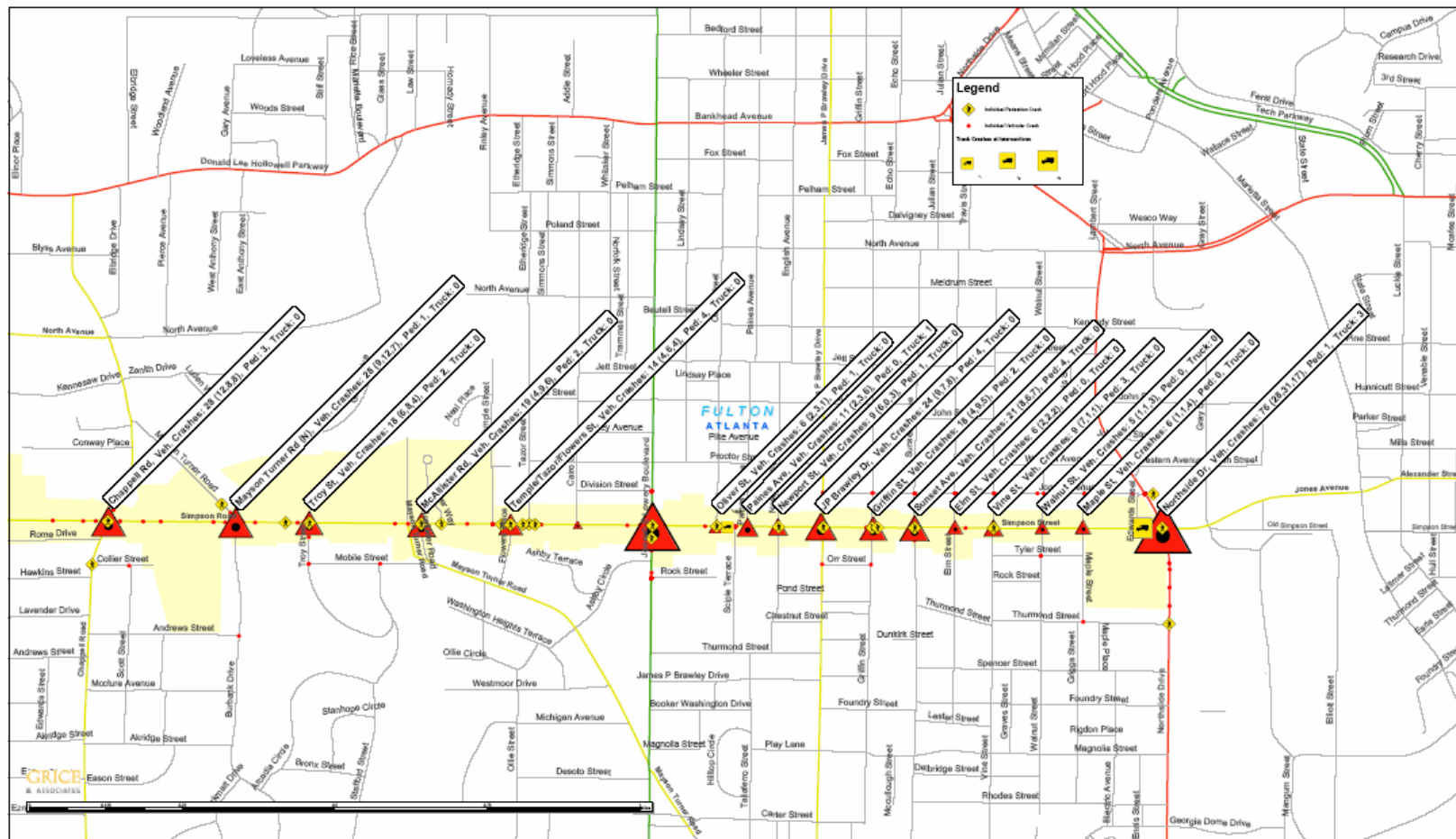
Crash Statistics: Simpson Road Corridor			
Street_1	Street_2	2000-2002 Annual Averages	
		Ped. Crashes	Ped Fatalities
Simpson Rd	J E Lowery Blvd	1.67	-
Simpson Rd	JP Brawley Dr	1.33	-
Simpson Rd	Sunset Ave	1.33	0.33
Simpson Rd	Temple/Tazor/Flowers St	1.33	-
Simpson Rd	Chappell Rd	1.00	-
Simpson Rd	Vine St	1.00	0.33
Simpson Rd	Holly Rd	0.67	-
Simpson Rd	McAllister Rd	0.67	-
Simpson Rd	Griffin St	0.67	-
Simpson Rd	Troy St	0.67	-
Simpson Rd	Northside Dr	0.33	-
Simpson Rd	Dixie Hills Cir	0.33	-
Simpson Rd	Hamilton Holmes	0.33	-
Simpson Rd	West Lake Ave	0.33	-
Simpson Rd	Mayson Turner Rd (N)	0.33	-
Simpson Rd	Lanier St	0.33	-
Simpson Rd	New Jersey/Aurora	0.33	-
Simpson Rd	Anderson Ave	0.33	-
Simpson Rd	Childs Dr	0.33	-
Simpson Rd	Newport St	0.33	-
Simpson Rd	Oliver St	0.33	-

Table 3: Simpson Road Corridor: Pedestrian Crashes at Intersections (Source: GDOT)

Crash Statistics for All intersections in the Simpson Road Corridor Study can be found in table 3:

Street_1	Street_2	Annual Crashes			2000-2002 Totals							2000-2002 Annual Averages						
		2000	2001	2002	Incidents	Fatalities	Injuries	Vehicles	Ped. Cras	Ped Fata	Truck Cras	Incidents	Fatalities	Injuries	Vehicles	Ped. Cras	Ped Fata	Truck Cras
Simpson Rd	Northside Dr	28	31	17	76	-	21	158	1	-	3	25	-	7	52	0	-	1
Simpson Rd	Maple St	1	1	4	6	-	2	11	-	-	-	2	-	1	4	-	-	-
Simpson Rd	Walnut St	1	1	3	5	-	2	10	-	-	-	2	-	1	3	-	-	-
Simpson Rd	Vine St	7	1	1	9	1	7	18	3	1	-	3	0	2	6	1	0	-
Simpson Rd	Elm St	2	2	2	6	-	3	11	-	-	-	2	-	1	4	-	-	-
Simpson Rd	Sunset Ave	8	6	7	21	1	12	41	4	1	-	7	0	4	14	1	0	-
Simpson Rd	Griffin St	4	9	5	18	-	11	36	2	-	-	6	-	4	12	1	-	-
Simpson Rd	JP Brawley Dr	9	7	8	24	-	13	49	4	-	-	8	-	4	16	1	-	-
Simpson Rd	Newport St	6	0	3	9	-	2	17	1	-	-	3	-	1	6	0	-	-
Simpson Rd	Paines Ave	2	3	6	11	-	2	21	-	-	1	4	-	1	7	-	-	0
Simpson Rd	Oliver St	2	3	1	6	-	1	12	1	-	-	2	-	0	4	0	-	-
Simpson Rd	J P Brawley Dr	30	21	22	73	-	44	146	5	-	-	24	-	15	49	2	-	-
Simpson Rd	Cairo St	1	1	0	2	-	-	3	-	-	-	1	-	-	1	-	-	-
Simpson Rd	Temple/Tazor/Flowers St	4	6	4	14	-	4	26	4	-	-	5	-	1	9	1	-	-
Simpson Rd	McAllister Rd	4	9	6	19	-	7	35	2	-	-	6	-	2	12	1	-	-
Simpson Rd	Troy St	6	8	4	18	-	12	34	2	-	-	6	-	4	11	1	-	-
Simpson Rd	Mayson Turner Rd (N)	9	12	7	28	-	14	57	1	-	-	9	-	5	19	0	-	-
Simpson Rd	Chappell Rd	12	8	8	28	-	14	58	3	-	-	9	-	5	19	1	-	-
Simpson Rd	Childs Dr	6	1	4	11	-	9	25	1	-	-	4	-	3	8	0	-	-
Simpson Rd	Holly Rd	4	7	10	21	-	11	40	2	-	-	7	-	4	13	1	-	-
Simpson Rd	Lanier St	12	7	5	24	-	17	49	1	-	-	8	-	6	16	0	-	-
Simpson Rd	West Lake Ave	19	15	5	39	-	19	75	1	-	-	13	-	6	25	0	-	-
Simpson Rd	Ezra Church Dr	0	2	0	2	-	2	4	-	-	-	1	-	1	1	-	-	-
Simpson Rd	Richardson Rd	0	6	2	8	-	2	12	-	-	-	3	-	1	4	-	-	-
Simpson Rd	Whittaker Cir	3	7	4	14	-	16	25	-	-	-	5	-	5	8	-	-	-
Simpson Rd	Simpson Ter	1	4	3	8	-	2	16	-	-	-	3	-	1	5	-	-	-
Simpson Rd	Dixie Hills Cir	1	4	2	7	-	4	12	1	-	1	2	-	1	4	0	-	0
Simpson Rd	Anderson Ave	6	4	4	14	-	10	25	1	-	-	5	-	3	8	0	-	-
Simpson Rd	Spellman St	0	0	1	1	-	-	2	-	-	-	0	-	-	1	-	-	-
Simpson Rd	Morris Brown Ave	3	0	0	3	-	1	6	-	-	-	1	-	0	2	-	-	-
Simpson Rd	New Jersey/Aurora	3	9	3	15	-	7	29	1	-	-	5	-	2	10	0	-	-
Simpson Rd	Sewanee Ave	2	4	4	10	-	-	19	-	-	-	3	-	-	6	-	-	-
Simpson Rd	Hamilton Holmes	29	33	29	91	-	52	199	1	-	-	30	-	17	66	0	-	-

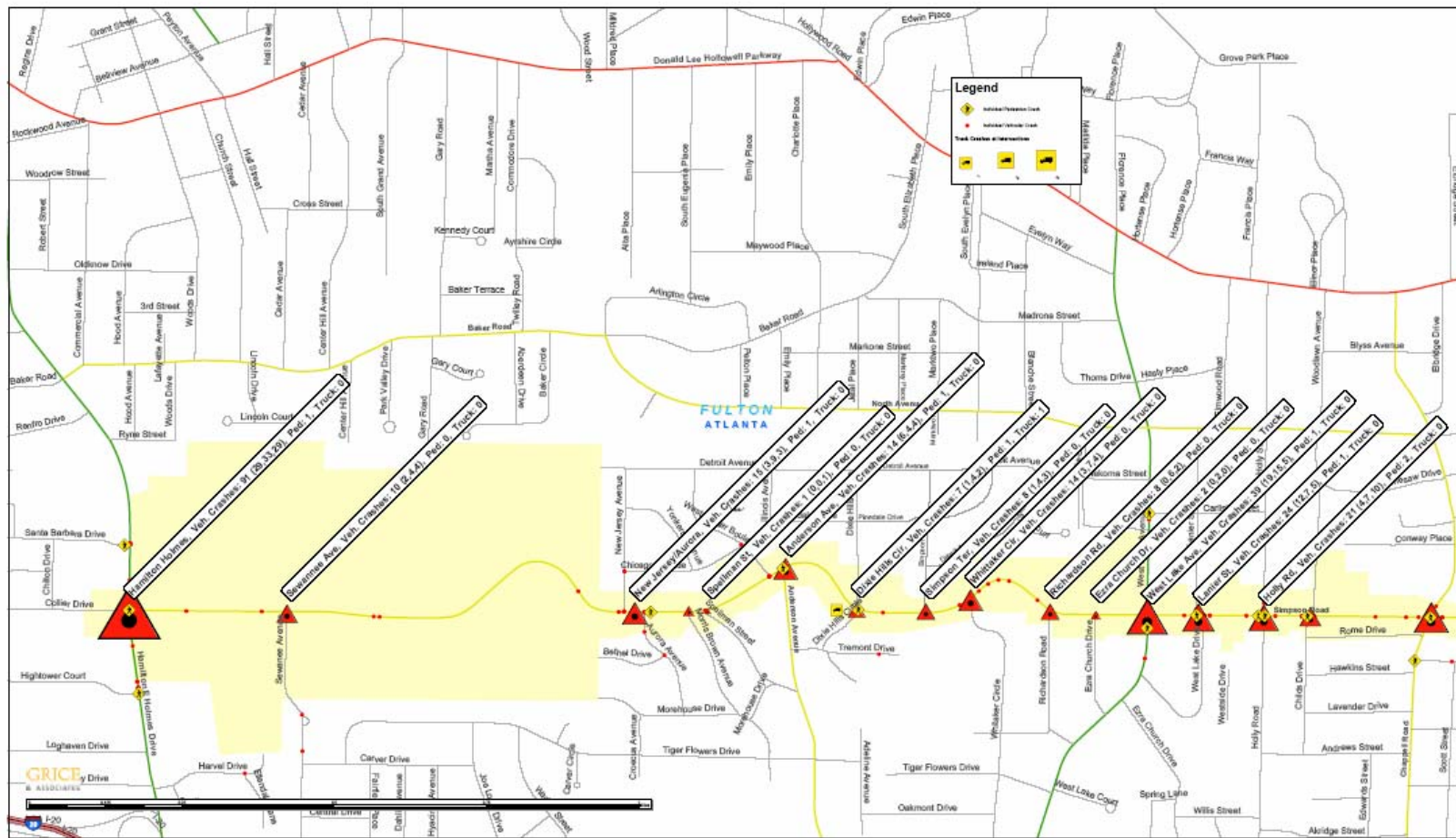
Table 4: Crash Statistics: Simpson Road Corridor (Source: GDOT)



Avg. Crashes-per-year at Intersections, 2000-2002

March 2006

Figure 4: Simpson Road Intersection Crashes: Eastern Section (Source: GDOT)



Avg. Crashes-per-year at Intersections, 2000-2002 March 2006

Figure 5: Simpson Road Intersection Crashes: Western Section (Source: GDOT)

The Statewide average crash rate for urban collector streets is 557 accidents per 100 million vehicle miles traveled. The crash rate for the Simpson Road Corridor is as follows:

Average Daily Traffic:	6861.5
Corridor Length	4.2 Miles
Hundred Million Miles Traveled/Yr	0.1052
Avg Crashes per year (2000-2002)	185.67
Crashes per HMVM	1,765, or 3.19 times the statewide average for a comparable facility.

Traffic Volumes

Historic Average Annual Daily Traffic (AADT) data for the study area was obtained from Georgia Department of Transportation (GDOT) database for the time period from 1997 to 2004. AADT values were obtained from several different count stations on all major roadways within the LCI study area. These volumes are summarized in Table 5, and can be seen graphically in Figure 1.

Simpson Road Corridor Redevelopment Plan Update												
GDOT Annual Average Daily Traffic Volumes 1997-2004												
					Average Annual Daily Traffic Counts							
TCNum	Street	Cross St	Relative Location	Direction	1997	1998	1999	2000	2001	2002	2003	2004
Simpson Road Corridor												
I1286	Simpson Rd	1/4 Mi W of Sawannes Av (Cemetery)		Total	4,512	4,268	4,790	5,153	4,543	6,627	4,955	5,410
I1284	Simpson St	Sunset Ave		Total	8,151	9,952	8,280	8,943	8,911	9,037	7,888	7,810
				East	4,514	5,356	4,335		4,794	4,862	3,959	
				West	3,637	4,596	3,945		4,117	4,175	3,929	
Cross Streets												
I1409	Anderson Ave	Tiger Flower Dr	3 Blk S of Simpson Rd	Total			6,914	3,368	3,500	3,448	2,914	2,820
I1414	Chappell Rd	Collier St	2 Blk S of Simpson Rd	Total			9,018	3,587	3,700	4,041	3,715	4,120
I1818	Elm Street	Jones Ave	1 Blk N of Simpson St	Total							577	15,100
I0942	Hamilton Holmes Dr	Longhaven Dr	2 Blk S of Simpson Rd	Total	19,001	18,425	17,001	17,543	17,254	17,552	18,515	19,470
I1458	James P Brawley Dr	Thurmond St	1/4 mi S of Simpson St	Total			6,914	1,401	1,400	1,420	2,007	2,050
I1276	Joseph Lowary Blvd	Booker Washington	1/4 mi S of Simpson St	Total	13,812	13,504	13,286	14,014	7,269	7,395	6,124	12,650
				North	7,184	6,898	7,138		7,269	7,395	6,693	
				South	6,628	6,606	6,148		6,956	-	6,124	
I1274	Joseph Lowary Blvd	Jett St	1/4 Mi N of Simpson St	Total	11,160	11,650	12,675	5,211	10,400	10,580	4,516	12,310
				North	11,160	11,650	12,675	5,211	10,400	10,580	5,401	12,310
				South				4,804			4,516	12,310
I1464	Mayson Turner Rd	Marie Ave	1/4 mi S of Simpson St	Total			6,914	2,789	2,900	2,941	2,320	2,380
I1419	West Lake Ave	Simpson Rd	1/2 Blk S of Simpson Rd	Total			9,598	11,781	9,828	9,826	9,794	9,970

Table 5: Simpson road Corridor Area Annual Average Traffic Volumes (Source: GDOT)

Existing And Future Roadway Capacity Analysis

One major component that determines the level of congestion and delay experienced by roadway users is the capacity of the roadway. Capacity refers to the quantity of traffic that a roadway is designed to handle before levels of congestion and delay fall below acceptable levels. By comparing the actual volume of traffic on a roadway against the design capacity of the roadway, it is possible to gauge the level-of-service that roadway users are likely to experience. The ratio of Volume-to-Capacity, (or V/C ratio) corresponds with a letter grade to indicate the theoretical level of service along that roadway. If the V/C ratio is greater than 1.0, a roadway is considered to be unacceptably congested.

Levels of service ratings based on capacity analysis provide an indication of which roadways are congested because they simply handle more traffic than they are designed for. This type of analysis does not account for additional delays that may be caused by operational problems at specific areas or intersections along a roadway. Table 5 outlines the relationship between levels-of-service and V/C ratios.

Level of Service Criteria for Roadway Segments⁽¹⁾

Table 6: Level of Service Criteria for Roadway Segments

Level of Service	Interpretation	Nominal Range to Volume-to-Capacity Ratio
A	Low volumes; primarily free-flow operations. Density is low, and vehicles can freely maneuver within the traffic stream. Drivers can maintain their desired speeds with little or no delay.	0.00 - 0.60
B	Stable flow with potential for some restriction of operating speeds due to traffic conditions. Maneuvering is only slightly restricted. The stopped delays are not bothersome, and drives are not subject to appreciable tension.	0.61 - 0.70
C	Stable operations; however, the ability to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer queues cause delays.	0.71 - 0.80
D	Approaching unstable traffic flow, where small increases in volume could cause substantial delays. Most drivers are restricted in their ability to maneuver and in their selection of travel speeds. Comfort and convenience are low but tolerable.	0.81 - 0.90
E	Operations characterized by significant approach delays and average travel speeds of one-half to one-third the free-flow speed. Flow is unstable and potential for stoppages of brief duration. High signal density, extensive queuing, or progression/timing are the typical causes of the delays.	0.91 - 1.00
F	Forced-flow operations with high approach delays at critical signalized intersections. Speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.	1.001+

⁽¹⁾ Source: *Highway Capacity Manual*, Transportation Research Board Number 212, January 1990.

Existing Capacity Analysis

The Atlanta Regional Commission's (ARC) Regional Travel Demand Model was used to estimate the existing transportation system in the area of the Simpson Road Corridor. Figure 5 illustrates the estimated PM Peak Hour Volume-to-Capacity (V/C) Ratios and Levels-of-Service (LOS) for major roadways within and around the Simpson Road Corridor. The capacity analysis indicates that nearly all road segments within the study area are operating within acceptable Level-of-Service, which the City of Atlanta defines as Level-of-Service D or better. Simpson road itself operates at LOS A throughout the corridor. All of the cross streets east of Chappell Road, operate at LOS C or better. West Lake Avenue and Hamilton Holmes Drive operate at LOS of E or F. This indicates that traffic volumes and roadway capacity are not

currently a significant issue along the Simpson Road Corridor, while north-south accessibility is a concern in the western portion of the corridor.

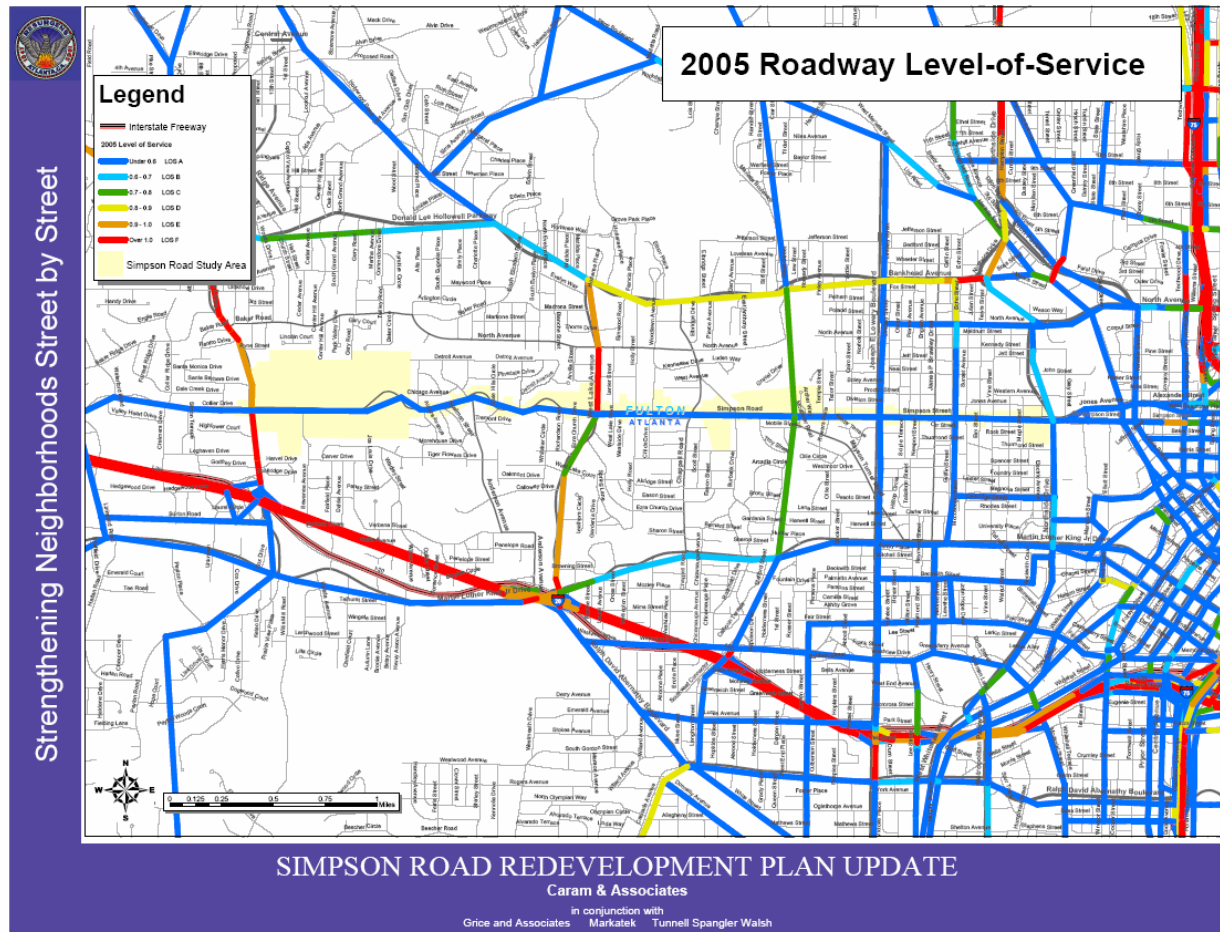


Figure 6: 2005 Roadway Level of Service

Future Capacity Analysis

Capacity analysis was performed for the future year 2030 using the assignments from the ARC Travel Demand Model, which models the roadway LOS levels in the area. The 2030 LOS is illustrated in Figure 6.

In the 2030 travel demand model, the LOS values are similar to the 2005 values. Simpson Road itself operates at LOS A throughout the corridor. All of the cross streets east of Chappell Rd, operate at LOS C or better. West Lake Avenue and Hamilton Holmes Drive still operate at LOS of E or F. While the ARC's Regional Transportation Plan includes a project programmed for 2030 to widen Hamilton Holmes Drive from 2 to 4 lanes adjacent to Simpson Road, the travel

demand model forecasts that the volume on this segment is likely to increase by 90%, so, despite the increased capacity, there is little change in the projected level-of service-conditions.

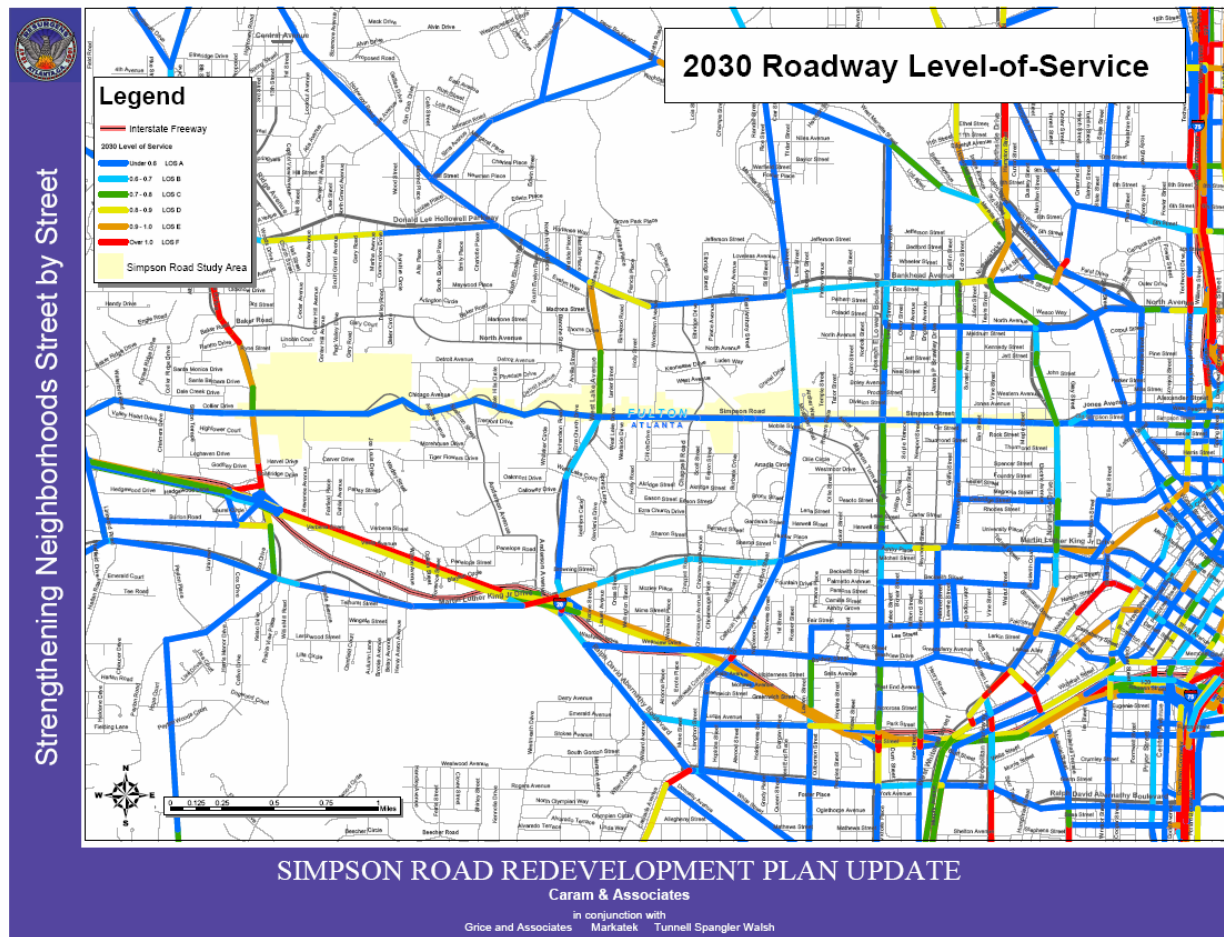
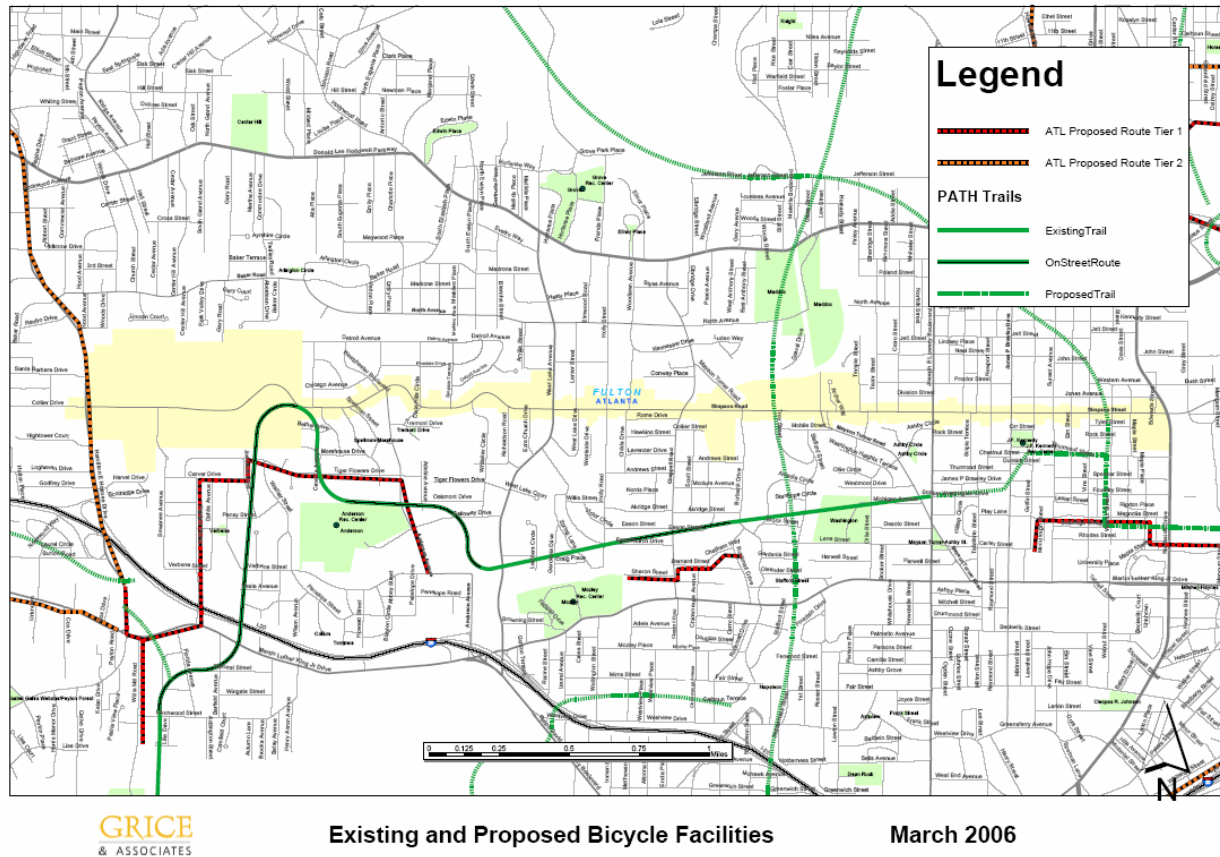


Figure 7: 2030 Projected Congestion

Bicycle Facilities and Greenways



There are currently no bicycle facilities within the Simpson Road Corridor study area, though several are planned. The recent reconstruction of Ivan Allen Boulevard includes on-street bicycle-lanes which end just to the east of the Simpson Corridor, and connect to regional activity centers such as the Georgia Aquarium, and Centennial Park.

The proposed BeltLine greenway path, which will intersect with the Simpson Road Corridor, will tie the corridor in with an expansive regional network of bicycle and pedestrian paths. Proposed PATH foundation trails include the programmed West Side Multi-use Trail, which utilizes the existing CSX rail corridor as a greenway trail. Another proposed greenway would utilize the abandoned rail corridor to the north and east of the English Avenue neighborhood, crossing Simpson Street to the west of Northside Drive.

Railway Crossings and Safety

CSX operates an active railway line with two at-grade crossings in the Simpson Road Corridor Study area.

One at-grade crossing, identified as 638643L is on Simpson Road between Chappell Road and Mayson Turner Road. Traffic control devices at this crossing include automatic gates, flashing lights, and an audible alarm (bell). Federal Railroad Administration records indicate that up to 5 trains per day use this crossing at a typical speed of 1-20 miles per hour.

Federal Railroad Administration records report only 1 collisions between a train and motor vehicle since 1996, with no injuries reported.

The grade level at the rail crossing is considerably higher than the adjacent roadway, creating a significant hump in the road which is a potential safety hazard to vehicles traveling on Simpson Road.

The other at-grade crossing in the study area, identified as 638644T is on Mayson Turner Road between Simpson Road and Mayson Turner Road. Traffic control devices at this crossing include flashing lights, and an audible alarm (bell). This crossing has no automatic gates. Federal Railroad Administration records indicate that up to 5 trains per day use this crossing at a typical speed of 1-20 miles per hour.

Federal Railroad Administration records report no collisions between a train and motor vehicle at this crossing since 1996.

Other Planning Initiatives

1995 Simpson Corridor Redevelopment Plan

The 1995 Simpson Corridor Redevelopment plan cited the following capital and program recommendations:

- Re-grade existing street through stripping at 2" course; repave from Northside Dr. to West Lake Ave. Include Atlanta Commuter Bike Route.
- Repair, realign and construct new curb and gutters from Northside to West Lake in accordance with city standards to accommodate bike lanes. Some areas require rebuilding of the street's base prior to surface improvements to facilitate drainage.
- Reorient traffic from Northside to Ashby by reducing [simpson Street from] 4 lanes to 3 lanes with a center turn lane. Include a parallel parking lane and bike lanes or wide curb lanes on the north side of the [Simpson] street. This parking should comply with City of Atlanta standards.
- Street beautification through the planting of trees (4' caliper with grates) every 50' on alternate sides.
- Railroad Crossing Improvements:

- Meet standards for urban areas including the addition of flush metal panels for the safe crossing of vehicular pedestrian and bike traffic.
- MARTA bus turn outs:
- Implement at appropriate locations from Northside Dr. to Ashby St. where parallel parking is not feasible or permitted.
- Sidewalk Improvements
- Retrofit for ADA accessibility at all corners from Northside Drive to West Lake Avenue.
- Infill new 6' wide concrete sidewalk from Woodlawn to West Lake on the north & south, from Lanier to existing sidewalk at West Lake on the north side of the street and from Chappell to Woodlawn on the north and south side of the street.
- Upgrade existing side walk from Woodlawn to West Lake on the north & south to City standards.
- Add street furniture such as trash cans, benches and bike racks.
- Crosswalk Improvements
- Provide striping in accordance with City standards.
- Fire Hydrant Relocation
- Relocate fire hydrants that obstruct the sidewalk for ADA compliance.
- Signal Box Relocation
- Relocate signal boxes that obstruct the sidewalk and which obstruct the motorist views of traffic at intersections.
- Intersection of Northside and Simpson to improve image and perception of the corridor.
 - Develop a community park with recreational fields.
- Proctor Creek Greenway Corridor Spur
 - Develop a spur to the City of Atlanta Greenway Trail

Although some of the 1995 recommendations have been fully or partially implemented, the majority have not.

BeltLine Redevelopment Study

The Atlanta BeltLine Redevelopment Plan was adopted by the Atlanta City Council in December of 2005. The Beltline is a project with the potential to transform the city of Atlanta. The project involves reviving an inner-city industrial landscape by providing over 12,000 acres of new parks and green space, 33 miles of recreational trails, and extensive mixed-use development centered upon a 22 mile transit and park path loop.



Figure 8: Beltline Aerial Rendering with TAD Boundary and Activity Centers

A key element of the BeltLine project is a major redevelopment node where the proposed BeltLine alignment crosses Simpson Road adjacent to the existing MARTA alignment. This proposed node includes significant medium density mixed use redevelopment between Herndon elementary School and Mayson Turner Road (northern section), a major expansion of Maddox Park, and the possibility of a new combined MARTA rail and BeltLine transit station at the corner of Simpson Road and Mayson Turner Road (southern section).



Figure 9: Proposed Simpson Road BeltLine Redevelopment Node Plan



BeltLine Graphics
courtesy of the BeltLine
Redevelopment Plan,
*Atlanta Development
Authority, 2006.*

Figure 10 Proposed BeltLine Simopsoin Road Cross Section and New MARTA station



Figure 11: Proposed BeltLine Simpson Road Redevelopment Node, Before and After, Artist's Rendering

The BeltLine Redevelopment Plan's Traffic Impact and Roadway Improvement Assessment forecasts that BeltLine-related development could increase traffic volumes on Simpson Road by 8.7% to 18.9%, and increase forecast 2030 volume-to-capacity ratios from 0.50-0.71 without BeltLine development to 0.56-0.80 with BeltLine development. On Joseph E. Lowery Boulevard, new vehicular trips generated by BeltLine development in 2030 are expected to increase the overall traffic volume by 4.4% - 15.8%, increasing the corridor's volume-to-capacity ratio from 0.22 - 0.64 in 2005 to 0.25 - 0.67 in 2030.

The BeltLine plan recommends the following projects to complement the goals of the BeltLine project, address the physical changes required by the project, and mitigate potential adverse traffic impacts of the BeltLine project:

- Intersection Improvements
- Simpson Road at Joseph E. Lowery Boulevard, Intersection Improvement, \$450,000
- Simpson Road at Mayson Turner Road, Intersection Improvement, \$450,000
- Simpson Road Corridor Study
- Simpson Street Area Neighborhood Traffic Calming, \$500,000
- Projects to Increase local connectivity around BeltLine redevelopment node by reconnecting broken street grid:
- Alice Way Extension from Simpson Road, to Neal Street Extension, New Roadway, \$380,000
- Neal Street Extension from Neal Place to Mayson Turner Road, New Roadway, \$1,080,000
- Troy Street Extension, from Simpson Road to E. Anthony Street, New Roadway, \$1,050,000
- Zenith Dr. Extension, from Zenith Drive to Troy Street Extension, New Roadway, \$150,000
- Joseph E. Lowery Boulevard, from Donald L. Hollowell Parkway to Jefferson Street, Roadway Upgrade, \$540,000

Vine City Regional Development Plan (1995)

The Vine City Redevelopment plan identified several issues and recommendations that are pertinent to the Simpson Road Corridor including sidewalk and streetscape enhancements to several streets to the south of Simpson Street between Joseph E. Lowery Boulevard and Northside Drive, and improved pedestrian crossings across Simpson Street in the same area. No significant transportation improvements were discussed or recommended on or along Simpson Street itself.

English Avenue Redevelopment Study and Update

The English Avenue Redevelopment Study Update is being prepared concurrently with this study. The two redevelopment plans are being closely coordinated and will reflect consistent findings.

Planned and Programmed Improvements

The City of Atlanta has a number of transportation projects programmed in or near the Simpson Road Corridor study area through the Quality of Life Bond Program and the Capital Improvements Program. These projects are listed in the table below.

Project Name	Project #	Project Description	Anticipated Construction Start
Simpson Road	00GO-0898	Streetscape Northside Dr. to West Lake Ave.	In Eval./Design
Lowery Blvd.and Simpson St.	00GO-0056	Intersection improvement	2006
Simpson Road and Sunset Ave.	00GO-0897	Intersection improvement	2006
Joseph E. Lowery Boulevard from DL Hollowell Parkway to RD Abernathy Road	00GO-0054	Resurfacing and Reconstruction	Pre-Construction
Traffic Calming Measures	00GO-0979	Unspecified	2010
Intersection Signals	00GO-0504	Unspecified	2008
Crosswalk Installation	00GO-0260	Replace existing crosswalks with international crosswalks at arterial and collector streets (ongoing)	2003

Table 7: Quality of Life Bond and CIP Programmed Transportation Projects

The Simpson Road Streetscape project between Northside Drive and West Lake Avenue is currently in design. The proposed improvements are extensive. Proposed improvements include streetscape treatments including 5 ft. sidewalks, 2 ft. of brick pavers between the curb and the sidewalk, pedestrian lighting, and improved pedestrian crossings at intersections. These improvements will be made at the following intersections on Simpson Road: Northside Drive, Vine Street, Sunset Avenue, Griffin Street, James P. Brawley Drive, Joseph E. Lowery Boulevard, Tazor St./Temple St./Flowers Place intersections, Troy Street, Mayson-Turner Road, Chappell Road, Holly Road, and West Lake Road. In addition, sidewalks and streetscapes will be continuous on the south side of Simpson Road from the MARTA tracks to Proctor Creek, on the

north side of Simpson Road between Proctor Creek and Mayson-Turner Road, on both sides of Simpson Road between Mayson-Turner Road and Chappell Road, and on the south side of Simpson Road from Chappell Road to the Holly Road intersection. With the completion of the Simpson Road streetscape projects there will be continuous sidewalks on both sides of Simpson Road from Northside Drive to West Lake Avenue. The project is being funded through a combination of federal Transportation Enhancement funds, through GDOT, and City of Atlanta Quality of Life Bond funds.

Additional projects for the study area sponsored by the City of Atlanta, the Georgia Department of Transportation, and MARTA are listed in the Atlanta Regional Commission Transportation Improvement Program (TIP) and GDOT State Transportation Improvement Program (STIP). Projects listed in the Atlanta Regional Commission TIP as later than 2010 are included in the regional long range transportation plan *Mobility 2030* and do not have specific funding established; they are included for information only.

Project Name	Project #	Project Description	Anticipated Completion Date
Inner Core Transportation Corridor – Phase 1, Segment 4 – Multiuse Path	AR-450D	Multiuse Path	2011 - 2020
Inner Core Transportation Corridor – Phase 2, Segment 4 – Transit Service	AR-451D1	Fixed Guideway Transit Service	2030
Inner Core Transportation Corridor – Phase 2, Segment 4 – Transit Service	AR-451D2	Fixed Guideway Transit Capital	2030
SR 280 (H.E. Holmes drive) from I-20 West to US 78/278 (D.L. Hollowell Parkway)	AT-005	Roadway capacity – from 2 lane to 4 lane facility	2030
Jones Avenue /Simpson St. /Alexander Street (A.K.A. JSA Corridor) improvements from Luckie St. to US 41 Northside Dr.	AT-188B & C / GDOT 0006952	Project combines segments of Jones, Simpson and Alexander into a new road and reroutes traffic from segments that will be permanently closed. Project includes construction of a multi-use corridor.	2009
West End Rail Multi-Use Trail from Simpson St. to Pryor Rd.	AT-AR-BP098 / GDOT 762562	Construction of a Multi-Use Bike/Ped. Facility	2008

Table 8: TIP/STIP Programmed Transportation Projects

Identified Traffic and Transportation Issues

During the first phase of the Simpson Road Redevelopment Plan public involvement process, members of the public were asked to identify transportation issues and potential transportation improvements in the study area. The following issues and recommendations were identified:

- Traffic and Roadway
 - 1st curve east of Holmes very dangerous, need shoulder improvement.
 - Reduce number of traffic lanes on Simpson Road
 - Improved signage
 - Left turn lanes at West Lake, Lowery
 - West Lake needs widening
 - All major intersections need left turn signals
 - Intersection geometry at Mayson Turner Road
 - Fix potholes
 - Rail crossing safety and convenience
- Sidewalks:
 - Lack of sidewalks
 - Condition of existing sidewalks
 - Continue Ivan Allen bike lane west
 - Simpson too busy for bike paths
 - James P. Brawley Drive need pedestrian crossing – possible light
- Streetscapes & Aesthetics
 - Improve street lighting in corridor
 - Poor aesthetics and streetscapes on roadways
- Transit
 - Lack of direct bus service bus access to MARTA station
 - Lack of bus stop amenities
 - Improve transit access
 - Public transportation to civic center
 - More direct bus routing

Strengths/Weaknesses/Opportunities/Weaknesses (SWOT) Analysis

The following analysis reflects a SWOT analysis for transportation-related issues within the Simpson Road Corridor.

Strengths:

Low traffic volumes in relation to roadway capacity.
Proximity to downtown Atlanta
Well-connected roadway network
Access to Interstates
Access to MARTA Rail
Engaged community

Weaknesses

Lack of direct transit routing
Lack of north-south connectivity in western portion of corridor
Condition of existing sidewalks
Lack of complete sidewalk network
Lack of bicycle facilities
Lack of transit amenities
Intersection geometry and safety
Utilities in /adjacent to right-of way
Unpleasant pedestrian environment
Areas with poor access management
Lack of parking to support commercial land uses.
Sub-standard roadway and sidewalk design
Limited right-of-way, topography issues for sidewalk expansion
Floodplain
At-grade rail crossings
Broken street grid around rail corridors
Horizontal and vertical line-of sight issues

Opportunities

Infill MARTA station
Development that supports transportation and land-use goals
BeltLine Transit & Greenway
BeltLine TAD & Redevelopment projects
Planned Greenway & Bicycle Network
Funded & Programmed projects
Improvements to Northside Drive Corridor
Georgia Tech and World Congress Center impacts
Impact of improvements to Donald L. Hollowell Parkway

Threats

Development that does not support transportation and land-use goals
Maintenance problems
Georgia Tech and World Congress Center impacts

2. Transportation Recommendations

Introduction

Based on a thorough assessment of the study areas current and future transportation and land use needs, the study team has developed a set of recommendations for transportation policies and projects that will address the goals of the Simpson Road Corridor Redevelopment Plan.

Roadway Operations:

Roadway Operations Policy Recommendations:

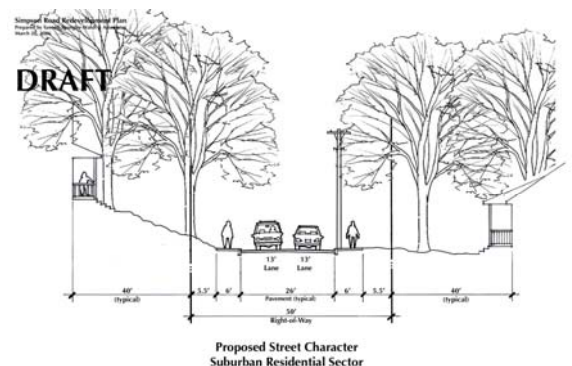
Typical Street Profiles

As a policy, the Simpson road Corridor should maintain unified and consistent street profiles that balance the corridor's transportation and safety needs with land use and neighborhood character objectives. The study has identified four distinct sectors within the Simpson Road Corridor and developed a recommended profile for each that can be accommodated almost exclusively using existing public right-of-way. Future development and transportation projects should support these profiles whenever possible.

Suburban Residential Sector

H.E. Holmes Drive to Chappell Road

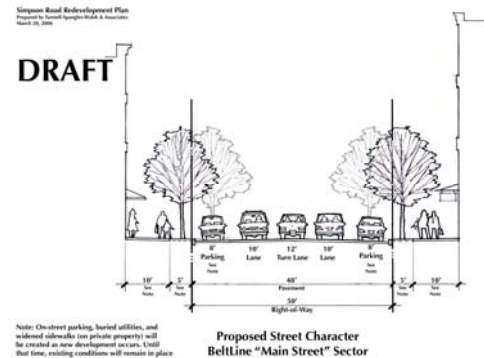
- Two 13' travel lanes
- Standard curb & gutter
- 5' Sidewalks both sides



BeltLine “Main Street” Sector

Chappell Road to BeltLine

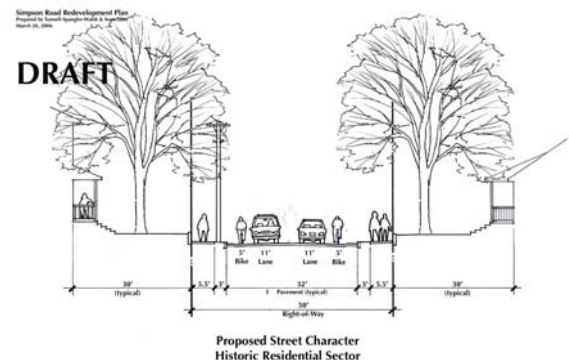
- Two 10' travel lanes
- One 12' Center Turn Lane
- Curb-side Parking (8') to be added with new development
- 10' Sidewalks both sides
- Standard curb & gutter



Historic Residential Sector

BeltLine to Joseph E. Lowery Blvd.

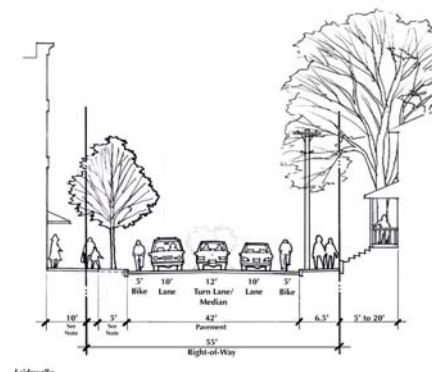
- Two 11' travel lanes
- Two 5' Bicycle Lanes
- 5' Sidewalks both sides
- Standard curb & gutter



Historic Mixed-use Neighborhood Sector

Joseph E. Lowery Blvd. to Northside Drive

- Two 10' travel lanes
- One 12' Center Turn Lane
- Two 5' Bicycle Lanes
- 10' Sidewalks both sides
- Standard curb & gutter



Signal System and communications: Ensure that all traffic signals within the corridor are installed and maintained in accordance with the latest standards. Ensure that the signals are properly timed and coordinated. Upgrade span-wire signals with mast arm signals. These measures will increase safety efficiency for all modes of travel, and improve aesthetics within the corridor.

Traffic controls: Ensure that all traffic controls, including signage, striping, and pavement markings are consistent with current MUTCD (Manual of Uniform Traffic Control Devices) standards.

Utility Relocation or Upgrade: To maintain accessibility along sidewalks and ensure vehicular safety, utilities and other impediments including utility poles, sign posts, and fire-hydrants, within sidewalk and in roadway clear-zones in should be removed or relocated in accordance with GDOT and ADA standards,.

Curb & Gutter Install, repair, or replace standard curband gutter throughout corridor to improve safety, drainage and aesthetics.

Access Management: Develop policies to reduce curb-cuts and vehicular access across sidewalks and pedestrian areas, particularly in the proximity of intersections. Encourage inter-parcel access for vehicles and pedestrians.

Re-grade Simpson Road at CSX Crossing to reduce grade differential. Install safety devices to improve safety at crossing for bicyclists and pedestrians. (Currently Programmed as Part of Simpson Road Streetscape Improvements)

Roadway Operations Project Recommendations

S7 Review and Improve Traffic Controls, Signage and Striping Corridor-Wide: Ensure that all traffic controls, including signage, striping, and pavement markings are consistent with current MUTCD (Manual of Uniform Traffic Control Devices) standards.

Reconfigure Simpson Road to conform to recommended Street Profiles:

S1 Historic Mixed-use Neighborhood Sector: Joseph E. Lowery Blvd. to Northside Drive

S2 Historic Residential Sector: BeltLine to Joseph E. Lowery Blvd.

S3 BeltLine “Main Street” Sector: Chappell Road to BeltLine

S16 Install Pedestrian Refuge and Raised Median in center turn lane of Simpson Street to improve pedestrian safety and traffic operations on Simpson St. between Sciple Terrace and Paines Ave. The traffic operations and safety analysis indicates high rates of pedestrian and vehicular crashes in this area, most likely due to the offset alignments of the local streets and high rates of mid-block pedestrian crossings. These conditions

support the construction of a pedestrian refuge and median to limit conflicting traffic operations and provide enhanced pedestrian crossing safety.

S17 Install Pedestrian Refuge and Raised Median in center turn lane of Simpson Street to improve pedestrian safety and traffic operations on Simpson St. near Griffin Street. The traffic operations and safety analysis indicates high rates of pedestrian and vehicular crashes in this area. The proximity of Kennedy Middle school, higher-density residential and commercial uses support the construction of a pedestrian refuge and median to limit conflicting traffic operations and provide enhanced pedestrian crossing safety.

S 27 Re-grade Simpson Road at CSX Crossing Currently Programmed as Part of Simpson Road Streetscape Improvements, but in need of additional funding.

S 28 Install “Signal Ahead” advanced warning signs, 125’ from the stop bar, on the following approaches:

- Eastbound approach to the intersection of Simpson Road and Joseph E. Lowery Boulevard
- Northbound approach to the intersection of Simpson Road and Joseph E. Lowery Boulevard
- Eastbound approach to the intersection of Simpson Road and Chappell Road.
- Northbound approach to the intersection of Simpson Road and Chappell Road
- Southbound approach to the intersection of Simpson Road and Westlake Avenue

Intersection Reconfiguration and Modifications

S10 Simpson Street at Joseph E. Lowery Blvd.

- Increase the corner radii based on AASHTO design standards for the three study intersections to accommodate transit, school buses and trucks.
- Reconfigure the intersection of Simpson Road at Joseph E. Lowery Boulevard:
 - To accommodate one 10-foot left turn lane with 125-foot storage, one 10-foot shared through and right turn lane on the westbound approach and 5-foot bike lanes on both sides of Simpson Road.

- To accommodate one 12-foot shared through-left-right turn lane and 5-foot bike lane on the eastbound approach, the west receiving leg should accommodate one 10-foot through travel lane and 5-foot bike lane.

S11 Simpson Road at Chappell Road

- At the intersection of Simpson Road at Chappell Road, increase the eastbound left-turn lane storage length to 100 feet

S12 Simpson Road at West Lake Ave

- Increase the corner radii based on AASHTO design standards for the three study intersections to accommodate transit, school buses and trucks.
- Install 10-foot left turn lanes on eastbound and westbound approaches with 100-foot storage at the intersection of Simpson Road at West Lake Avenue.

S13 Simpson Road at Mayson Turner Avenue (North Segment)

- Safety Assessment and Improvements

S14 Chappell Road at Mayson Turner Avenue

- Safety Assessment and Improvements

S 15 Simpson Road at H.E. Holmes Drive

- Safety Assessment and Improvements

Recommendations for Further Study

S23 Conduct further study to evaluate safety of current two-way operations on narrow streets North of Simpson Street between Joseph E. Lowery Boulevard and Northside Drive. Evaluate feasibility of widening roadways, parking restrictions, or restricting operations to one-way travel.

S 29 Signal Warrant Review: Several intersections along the Simpson Road Corridor should reviewed to determine if they warrant the installation or removal of traffic signals based on pedestrian safety, vehicular operations and adjacent land use.

- Signal Warrant: Mayson Turner Road (South Segment) It is likely that this intersection currently does, or soon will warrant a traffic signal based on existing development plans.
- Signal Warrant: Tazor Street and Troy Street: Due to the proximity of Herndon elementary School to the intersection of Simpson St and Temple Street, it is recommended that additional study be carried out to determine whether the existing signal at Tazor Street should be removed and a new signal be erected at Temple Street.

Pedestrian Improvements:

Pedestrian Policy recommendations

The entire Simpson Road Corridor should ultimately have acceptable sidewalks on both sides of the road throughout the corridor. To prioritize potential projects, it is recommended that the following approach be used:

Standards for New Sidewalks:

All new sidewalks should be 5' min, ADA-compliant

All new sidewalks in high-density mixed-use and commercial areas should be 10' minimum with landscape buffer, ADA-compliant

All intersection improvements should include ADA-compliant pedestrian ramps

All existing signalized intersections should include ADA compliant pedestrian signals and, crosswalks on all legs

Utilities and signs should not be located within sidewalks in such a way that they inhibit safe passage or ADA compliance.

Highest Priority Pedestrian Improvements

Install sidewalks on at least one side all roads collector or higher

Install or upgrade ADA compliant sidewalks on both sides near schools & activity centers

Install ADA ramps and full crosswalks at all signalized intersections and near schools and activity centers.

Second Priority Pedestrian Improvements

Upgrade existing sub-standard sidewalks to 5', ADA-compliant

ADA ramps at all curbs

Third Tier Pedestrian Improvements

Sidewalks on both sides of all roads classified as collector or higher

Pedestrian Improvement Projects Recommendations

S4 New 5' Sidewalk, north side of Simpson Road from Hamilton.E. Holmes Drive to New Jersey Avenue.

S5 New 5' Sidewalk, south side of Simpson Road from Sewanee Avenue to Jew Jersey Ave.

S6 New 5' Sidewalk, south Side of Simpson Road from New Jersey Avenue to West Lake Avenue, South Side

S27 Simpson Road Streetscape Project Additional Funding The Simpson Road Streetscape project currently underway will address a significant share of pedestrian issues and needs along the Simpson Road Corridor. There is currently not enough funding programmed for the project to complete all of its elements. Additional funding should be secured to implement the project as planned and designed.

Safety improvements at crosswalk adjacent to Herndon Elementary School (included in project S7: Review and Improve Traffic Controls, Signage and Striping Corridor-Wide)

Safety improvements at crosswalk near Dixie Hill Circle (included in project S7: Review and Improve Traffic Controls, Signage and Striping Corridor-Wide)

New or upgraded crosswalks near MARTA Bus Stops more than 200' from a signalized intersection (included in project S24: Corridor-wide Transit Amenities)

Bicycle Improvements

The operational improvement recommendations for Simpson Rd include reconfiguration projects for Simpson Road from Northside Drive to the Beltline that incorporates 5' bike lanes on both sides of the road (S1 and S2).

Other regional bicycle and greenway initiatives that should be support the goals of the Simpson Road Corridor Redevelopment plan, and as such should be supported by the plan include:

Atlanta BeltLine

English Avenue Greenway

PATH West-Side Multi-Use Trail

Transit Routes & Facilities:

Transit Policy recommendations

MARTA Bus Route Structure alterations: The current route structure of the MARTA system concentrates primarily on serving MARTA transit stations to the south of the Simpson Road Corridor, without providing adequate service along the corridor or to activity centers in Midtown and Downtown Atlanta. The Goals of the Simpson Road Corridor Redevelopment Plan would best be met with direct transit service along the Simpson Road Corridor that would provide continuous service along the corridor with direct connections to Midtown and Downtown Atlanta, and other major arterials such as Northside Drive and H E Holmes Drive. It is recommended that MARTA review its route structure and consider a direct route along Simpson road and connecting thoroughfares.

MARTA/BeltLine Transit Station: This plan supports the proposed new infill transit Station that would connect the Atlanta BeltLine and MARTA at Simpson Road.

Atlanta BeltLine: This plan supports the Atlanta BeltLine proposal as a vital key to improving the quality of life along the Simpson Road Corridor and to provide economic development incentive.

Transit Project Recommendations:

S24 Corridor-Wide Transit Amenities Ensure that all transit stops are safe, paved, and equipped with safe and adequate sidewalks and pedestrian crossings.

S25 Activity Center Enhanced Transit Amenities Ensure that all Bus Stops near schools and activity centers are equipped with transit shelters, seating, lighting, and trash receptacles.

S26 MARTA Bus Route Structure alterations: Implement revised direct transit service along the Simpson Road Corridor.

Local and regional Connectivity

The following projects will improve local connectivity by linking neighborhoods, schools and activity centers in areas where the street grid is currently discontinuous. These projects will make it possible

- S18 White Elementary New Connection** A new 2 lane road linking Detroit Avenue and North Avenue or Baker Road in the vicinity of White Elementary School and businesses along Simpson Rd will elementary school with neighborhoods to the north. This linkage will increase mobility and accessibility, especially for pedestrians and bicyclists, and reduce vehicle-miles-traveled and emissions for school-related trips. Currently, the trip from the intersection of North Avenue to White Elementary School is 1.6 miles, which is beyond a comfortable range for walking.. Depending on its alignment, a new road connection there could reduce the trip to as little as .13 miles.

The following projects restore roadway connections that are disrupted by the confluence of the BeltLine MARTA, and CSX Rail Corridors. This will provide enhanced mobility and accessibility to proposed mixed-use redevelopment projects along Simpson Rd. near the Beltline and to the proposed expansion of Maddox Park.

- S19 Troy Street New Connection** New 0.32 mile Roadway to reconnect street grid near BeltLine redevelopment and provide access to new Maddox Park Extension
- S20 North Avenue New Connection** New 0.27 mile Roadway to reconnect street grid near BeltLine redevelopment and provide access to new Maddox Park Extension
- S21 Temple Street New Connection** New 0.12 mile Roadway to reconnect street grid near BeltLine redevelopment and provide access to new Maddox Park Extension
- S22 Jett Street New Connection** New 0.36 mile Roadway to reconnect street grid near BeltLine redevelopment and provide access to new Maddox Park Extension

Appendix 1: Supporting rationale for 4 lane to three Lane conversion of Simpson Road

Project Rationale

The Simpson Road Corridor Plan contains a recommendation to modify the cross-section of the road between Northside Drive and Lowery Boulevard from 4 through lanes to a 3 lane facility with bike lanes. This recommendation improves safety and operations for vehicles and pedestrians, and allows continuity in bike lanes from downtown Atlanta to the future BeltLine development node along Simpson Road and the programmed Westside Multi-use Path in the same area.

Background

Simpson Road in this location is currently a 4 lane road with 2 travel lanes in either direction. It is functionally classified as an Urban Collector. Current average daily traffic (ADT) on Simpson Road is less than 8,000 vehicles per day (GDOT data for traffic counts 2003 and 2004). 2030 future estimated ADT on Simpson Road is less than 10,000. The future year ADT estimates include the projected impacts of development of a BeltLine node along Simpson Road about 0.4 miles west of this location.

These ADT volumes are relatively low for a 4 lane urban collector facility. Georgia Department of Transportation (GDOT) guidance suggests that increasing capacity of a roadway from 2 lanes may be warranted when the design hour volume is greater than 800 vehicles per hour (VPH) in either direction. Current peak hour counts on Simpson at Lowery are significantly less than this threshold in the p.m. peak (522 westbound, 280 eastbound) and the a.m. peak period (211 westbound, 379 eastbound) according to traffic counts taken in March of 2006 for the Simpson Road Corridor Plan.

There are many successful instances of low volume 4 lane roadways being converted to 3 lane facilities, with one travel lane in either direction and a center turn lane. Generally these conversions are undertaken to improve the neighborhood feel of an area and to allow implementation of bike lanes, additional on street parking, transit accommodation, wider sidewalks and streetscape, or some mixture of these elements. The GDOT Context Sensitive Design Guidance, April, 2006, states, *“Designers are generally more open to exceptions on routes of lower functional classification. Collectors and local streets carry lower volumes of travel over shorter distances and typically have more familiar users.”*

The Simpson Road Corridor functions as a de facto east west thoroughfare, although with relatively low traffic volumes. As a thoroughfare, it is paralleled by three much higher functioning parallel thoroughfares: Donald L. Hollowell Parkway to the North, and Martin Luther King Boulevard to the South, both major arterials, and the Interstate 20 freeway to the South. Donald L. Hollowell Parkway is currently programmed to be widened to a continuous four lane road from Interstate 285 to Northside Drive, and upgraded by GDOT, which is likely to have the effect of making it a more attractive thoroughfare to east-west commuters, and thus

lessening the relative attractiveness of Simpson Road as a thoroughfare and reducing traffic volumes. In addition, all of these parallel routes avoid the at-grade rail crossing on Simpson Road.

Conversion of Simpson Road to a 3 lane cross-section allows for use of 10' of the existing road surface to be converted into bicycle lanes; one 5' bike lane on either side of Simpson Road. Bike lanes in this location, and along Simpson Road to the west of Lowery Boulevard to the BeltLine, allow connection to bike lanes currently being constructed along Ivan Allen Boulevard to the east of Northside Drive and to the programmed Westside Multi-use Trail to be constructed along the BeltLine. This connectivity provides continuous bike lanes into downtown Atlanta, and to a major off road trail, and begins to develop a bike network system on Atlanta's west side.

Conversion of Simpson Road to a 3 lane cross-section also benefits pedestrian safety by reducing the number of traffic lanes they have to cross to get across Simpson Road. The center turn lane can include raised medians in selected locations to provide access management for offset intersections, reducing conflict points, and providing the opportunity to create pedestrian refuge islands that reduce the potential for conflict with vehicles and allow crossing the through lanes in stages. It also improves the pedestrian environment by further separating travel lanes from pedestrians on adjacent sidewalks.

At several intersections along Simpson Road with limited sight distance and tight turning radii, the separation of the through lanes from the corner provided by the bike lanes may also help to smooth turn movements and improve safety. The center turn lane should better delineate where left turns by vehicles should be made and accommodate the anticipated level of turning traffic.

Simpson Road to the west of Lowery Boulevard is already a 3 lane street, with 2 westbound through lanes and one eastbound through lane. This section is proposed to be converted to a 2 lane section with bike lanes, allowing for continuation of the bike lanes but also improved lane continuity for motor vehicles. A detailed traffic engineering analysis undertaken at this location indicates that the intersection level of service will still be acceptable, and that overall through put will not be adversely impacted, both for current and future year projected traffic volumes.

In addition, at a national level, there are some studies that suggest decreased accident rates and improved operations for emergency response vehicles on arterial roads converted from 4 lanes to 3 lanes, as shown in the table below:

TABLE 3 Changes in Traffic Volume and Collisions After Roadways Changed from Four Lanes to Two Lanes plus TWLTL (Seattle, Wash.)

ROADWAY SECTION	DATE CHANGE	ADT (BEFORE)	ADT (AFTER)	CHANGE	COLLISION REDUCTION
Greenwood Ave. N, from N 80 th St. to N 50 th St.	April 1995	11872	12427	4 lanes to 2 lanes plus TWLTL plus bike lanes	24 to 10 58%
N 45 th Street in Wallingford Area	December 1972	19421	20274	4 lanes to 2 lanes plus TWLTL	45 to 23 49%
8 th Ave. NW in Ballard Area	January 1994	10549	11858	4 lanes to 2 lanes plus planted median with turn pockets as needed	18 to 7 61%
Martin Luther King Jr. Way, north of I-90	January 1994	12336	13161	4 lanes to 2 lanes plus TWLTL plus bike lanes	15 to 6 60%
Dexter Ave. N, East side of Queen Anne Area	June 1991	13606	14949	4 lanes to 2 lanes plus TWLTL plus bike lanes	19 to 16 59%
24 th Ave. NW, from NW 85 th St. to NW 65 th St.	October 1995	9727	9754	4 lanes to 2 lanes plus TWLTL	14 to 10 28%
Madison St., from 7 th Ave. to Broadway	July 1994	16969	18075	4 lanes to 2 lanes plus TWLTL	28 to 28 0%
W Government Way/Gilman Ave. W, from W Ruffner St. to 31 st Ave. W	June 1991	12916	14286	4 lanes to 2 lanes plus TWLTL plus bike lanes	6 to 6 0%
12 th Ave., from Yesler Way to John St.	March 1995	11751	12557	4 lanes to 2 lanes plus TWLTL plus bike lanes	16 to 16 0%
Total					185 to 122 34%

Source: The Conversion of Four-Lane Undivided Urban Roadways to Three-Lane Facilities
 Thomas M. Welch, Director, Office of Transportation Safety
 Engineering Division, Iowa Department of Transportation

3. Implementation Plan

Cost Assumptions

As with any macro-level planning process, it is impossible to perfectly assign costs to future transportation projects. However it is possible to estimate based on standard cost assumptions.

The following assumptions are used in the Implementation Plan Matrices found on the following pages. These costs include demolition and installation of transportation facilities only. They do not include decorative or accessory elements that are not directly related to the transportation facilities, such as landscaping, trees, and street furniture. These cost estimates are also exclusive of right-of-way, which is estimated separately in the implementation plan matrices.

Transportation Cost Assumptions

Sidewalks -

- Sidewalks - \$5.50 / sf
- Curb repair and resetting \$7.50 / lf
- Duratherm Crosswalks \$4,500/leg
- ADA Ramps \$8,000/ int.

Bicycle Facilities:

- Bike Path Striping & Signage \$50,000 / mile
- Multi-Use Trail: \$5.50 / sf

Signal Improvements:

- Mast Arm Signal Upgrade \$125,000/ int.
- Signal Timing \$4,500/ int.
- Fiber Optic Communications \$24,000 / mile

Medians:

- Concrete \$5.50 / sf
- Planted \$5.00 / sf
- Curb \$15.00 / lf

Operational Improvements:

- Striping & Signage \$50,000 / mile
- Intersection Modification* \$675,000/ int.
- Curb repair and resetting \$7.50 / lf
-

Capacity Enhancements:

- Widen 2 lanes to 4 \$3,700,000 / mile
- Widen 4 lanes to 6 \$4,180,000 / mile
- New 2 Lane Road with Sidewalks \$4,138,000 / mile
- New 4 Lane Road with Sidewalks \$5,024,000 / mile
-
- Pedestrian Lighting:
 - Atlanta Type “B” Pedestrian Lights \$2,600 each, 2 per 100’

Right of Way Cost

- Primary \$400,000/acre
- Secondary \$320,000/acre

Land costs are estimated based on 2004 values reported by the Fulton County Tax Assessor. Land Costs are increased by 30% to account for inflation. Primary right-of-way refers to commercial real estate on a major thoroughfare. Secondary right-of-way refers to all other properties.

* The cost estimates for a standard intersection improvement are based on a typical four-way intersection with the following modifications:

- Pedestrian Improvements,
- Curb & Gutter
- ADA Compliance
- Turn radius modifications,
- Measures to address poor sight distance,
- Addition, removal, or modification of turn lanes,
- Alterations to traffic controls
- Access Management
- Cost estimates for individual intersection modification projects may be adjusted based on engineering judgment to account for variations in the extent and complexity of potential modifications.

Implementation Plan 1

Implementation Plan 2

4. Traffic Analysis

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TOPOGRAPHY

Simpson Road is oriented in the east-west direction and Joseph E. Lowery Boulevard, Chappell Road, and West Lake Avenue run in the north-south direction. Figure 1, the Location Map in Appendix A, illustrates the study location.

1. Simpson Road at Joseph E. Lowery Boulevard

At the study location, the northbound approach of Joseph E. Lowery Boulevard at Simpson Road is comprised of one 10-foot shared through/left-turn travel lane and one 10-foot shared through/right-turn travel lane. The southbound approach is comprised of one 12-foot shared through/left-turn/right-turn travel lane.

The westbound approach of Simpson Road at Joseph E. Lowery Boulevard has one 10-foot shared through/left-turn lane and one 10-foot shared through/right-turn lane. The eastbound approach of Simpson Road has a 12-foot shared through/left-turn/right-turn travel lane.

2. Simpson Road at Chappell Road

At the study location, the northbound approach of Chappell Road at Simpson Road is comprised of one 13-foot shared through/left-turn/right-turn travel lane. The southbound approach of Chappell Road and Simpson Road is comprised of one 14-foot shared through/left-turn/right-turn travel lane.

The eastbound and westbound approach of Chappell Road at Simpson Road is comprised of one 10-foot left turn lane on each approach and one shared through/right-turn travel lane.

3. Simpson Road at West Lake Avenue

At the study location of Simpson Road at Westlake Road, the northbound approach is comprised of one 11-foot shared through/left-turn/right-turn travel lane and the southbound approach is comprised of one 12-foot shared through/left-turn/right-turn travel lane.

The westbound and the eastbound approaches are each comprised of one-16-foot shared through/left-turn/right-turn travel lane on each approach.

(For details please see photos of study area in Appendix B and the Existing Conditions diagram in Appendix C.)

EXISTING TRAFFIC CONTROL

The study intersections of Simpson Road at Joseph E. Lowery Boulevard, Simpson Road at Chappell Road, and Simpson Road at West Lake Avenue are controlled by a traffic signal.

VEHICULAR SPEEDS

The posted speed limit on Simpson Road, which is in the eastbound and westbound directions, is 35 mph. The posted speed limit along Joseph E. Lowery Boulevard, Chappel Road, and Westlake Avenue is 25 mph.

PEDESTRIAN MOVEMENTS

There are crosswalks and sidewalks present at the intersection, and pedestrians were observed during field observations.

PARKING

On-street parking was not observed in the vicinity of the study intersections.

CRASH HISTORY

Crash reports were obtained from Georgia Department of Transportation's (GDOT) database. The data was obtained for a three (3) years period from January 2000 to December 2002 and summarized in Tables 1-3.

**Simpson Road at Chappell Road
Table 1**

Year	Number	Types of Crashes
2000	12	3 Right Angle 6 Rear End 1 Head On 1 Side Swipe-Opposite Direction 1 Side Swipe-Same Direction
2001	8	4 Right Angle 3 Rear End 1 Head On
2002	8	4 Right Angle 1 Rear End 1 Side Swipe-Same Direction 2 Single Car

**Simpson Road at Joseph E. Lowery Boulevard
Table 2**

Year	Number	Types of Crashes
2000	27	11 Right Angle 7 Rear End 2 Head On 1 Side Swipe-Opposite Direction 3 Side Swipe-Same Direction 3 Single Car
2001	21	9 Right Angle 5 Rear End 2 Head On 3 Single Car 2 Side Swipe-Same Direction
2002	22	9 Right Angle 4 Rear End 3 Head On 3 Side Swipe-Same Direction 3 Single Car

**Simpson Road at West Lake Avenue
Table 3**

Year	Number	Types of Crashes
2000	19	5 Right Angle
		8 Rear End
		1 Head On
		2 Side Swipe-Opposite Direction
		3 Single Car
		3 Right Angle
2001	15	7 Rear End
		1 Head On
		3 Side Swipe-Opposite Direction
		1 Single Car Crash
		2 Right Angle
2002	5	1 Side Swipe-Opposite Direction
		1 Side Swipe-Same Direction
		1 Single Car

INTERSECTION CAPACITY ANALYSIS

Traffic Forecast

Forecasted traffic volumes were based on growth rates reflected in the Atlanta Regional Commission (ARC) Travel Demand Model and Atlanta BeltLine Redevelopment Plan's 2030 development projections. It should be noted that these growth rates were based on a conservative approach. Approach growth rates of the study intersections are summarized in Tables 4-6.

2009			
Table 4			
	Growth Rate		
	Simpson Road at JEL Blvd	Simpson Road at Chappel Road	Simpson Road at West Lake Avenue
Eastbound	2%	1%	4%
Westbound	4%	0%	1%
Northbound	1%	0%	1%
Southbound	2%	1%	1%

2012			
Table 5			
	Growth Rate		
	Simpson Road at JEL Blvd	Simpson Road at Chappel Road	Simpson Road at West Lake Avenue
Eastbound	4%	3%	8%
Westbound	7%	1%	3%
Northbound	4%	1%	3%
Southbound	3%	3%	3%

2030 with Beltline Background traffic			
Table 6			
	Growth Rate		
	Simpson Road at JEL Blvd	Simpson Road at Chappel Road	Simpson Road at West Lake Avenue
Eastbound	31%	26%	53%
Westbound	48%	18%	27%
Northbound	31%	18%	27%
Southbound	27%	26%	27%

As part of the existing conditions assessment and project recommendations for the Simpson Road Corridor Redevelopment, Grice and Associates, Inc. conducted an Intersection Capacity analysis for the three primary intersections along Simpson Road. These intersections included:

- Simpson Road at Joseph E Lowery
- Simpson Road at West Lake Avenue
- Simpson Road at Chappell Road

The purpose of this analysis was to establish a clearer understanding of existing and likely future traffic operation conditions, and to test the feasibility of recommended transportation improvements. The results of this analysis will be used to develop specific transportation recommendations in the Action Plan.

The existing and future capacity and Level of Service (LOS) for the study intersections was based on analysis procedures provided in the *Highway Capacity Manual (HCM)*, *Special Report 209*, published by the Transportation Research Board (2000). Synchro, a traffic simulation and modeling program, which follows the HCM criteria for determining LOS for signalized and unsignalized conditions, was used in this study.

Existing Conditions

Table 7 shows the existing conditions analysis results for AM and PM peak periods for signalized intersections

Table 7		
LOS for Signalized Intersections – Existing Conditions		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	C	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	B	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	B	B
Westbound Approach	C	C
Northbound Approach	B	B
Southbound Approach	B	C
Intersection	B	C

Future Year Analysis

The future year analysis was performed for 2009 No Build, 2009 Build, 2012 No Build, 2012 Build, 2030 No Build and 2030 Build. The traffic volumes were projected based on the Atlanta Regional Commission (ARC) Travel Demand Model.

The existing traffic volumes were factored to account for the growth in the area and the capacity analysis was performed. Tables 8–13 below reflect the results of the future conditions analysis.

Table 8		
LOS for Signalized Intersections – 2009 No Build		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	C	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	B	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	B	B
Westbound Approach	C	C
Northbound Approach	B	B
Southbound Approach	B	C
Intersection	B	C

Table 9		
LOS for Signalized Intersections – 2009 Build		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	C	C
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	A	A
Westbound Approach	A	B
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	A	B
Westbound Approach	A	B
Northbound Approach	C	B
Southbound Approach	B	B
Intersection	B	B

Table 10		
LOS for Signalized Intersections – 2012 No Build		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	C	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	B	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	B	B
Westbound Approach	C	C
Northbound Approach	B	B
Southbound Approach	B	C
Intersection	B	C

Table 11		
LOS for Signalized Intersections – 2012 Build		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	A	A
Westbound Approach	A	B
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	A	A
Westbound Approach	A	A
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	A	B
Westbound Approach	A	B
Northbound Approach	C	B
Southbound Approach	B	C
Intersection	B	C

Table 12		
LOS for Signalized Intersections – 2030 No Build		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	B	B
Westbound Approach	C	B
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	B	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	B
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	C	C
Westbound Approach	B	C
Northbound Approach	C	C
Southbound Approach	C	C
Intersection	C	C

Table 13		
LOS for Signalized Intersections – 2030 Build		
	LOS	
	AM Peak	PM Peak
Simpson Road at Joseph E Lowery		
Eastbound Approach	B	B
Westbound Approach	B	C
Northbound Approach	B	B
Southbound Approach	B	C
Intersection	B	B
Simpson Road at West Lake Ave		
Eastbound Approach	A	A
Westbound Approach	A	B
Northbound Approach	B	B
Southbound Approach	B	C
Intersection	B	B
Simpson Road at Chappell Road		
Eastbound Approach	A	B
Westbound Approach	A	B
Northbound Approach	B	B
Southbound Approach	B	C
Intersection	B	B

Summary of Capacity Analysis

1. Existing:
 - All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods
2. 2009 No-Build:
 - All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods
3. 2009 Build:
 - All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods
4. 2012 No-Build:

- All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods

5. 2012 Build:

- All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods

6. 2030 No-Build:

- All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods

7. 2030 Build:

- All the approaches of study intersections operates at an acceptable LOS (C or better) during AM and PM peak periods

CONCLUSIONS

- All three intersections operate at acceptable LOS (C or better) in all seven conditions analyzed.
- Based on an analysis of traffic data, accident experience, intersection operations and capacity requirements, improvement measures were proposed, evaluated and selected. Please see Section “Recommendations”, below, for detailed improvement measures.
- Based on safety analysis, it was determined that there is a need to add left turn lanes on various approaches of the study intersections.

RECOMMENDATIONS

- Traffic signal coordination and optimization for the study intersections:
 - Intersection splits
 - Intersection cycle length
 - Intersection offset
 - Network cycle lengths
 - Network offsets
- Increase the corner radii based on AASHTO design standards for the three study intersections to accommodate transit, school buses and trucks.

- Install a “Signal Ahead” advanced warning sign, 125’ from the stop bar, on the following approaches:
 - Eastbound approach to the intersection of Simpson Road and Joseph E. Lowery Boulevard.
 - Northbound approach to the intersection of Simpson Road and Joseph E. Lowery Boulevard.
 - Eastbound approach to the intersection of Simpson Road and Chappell Road.
 - Northbound approach to the intersection of Simpson Road and Chappell Road.
 - Southbound approach to the intersection of Simpson Road and Westlake Avenue.
- It is recommended that Simpson Road be reconfigured to a 3-lane facility on the east of Joseph E. Lowery Boulevard and 2-lane facility on the west of Joseph E. Lowery with bike lanes on both sides based on engineering analysis. This will provide multi-modal mobility and will not have any negative impact on the safety. The above lane configuration will meet the capacity requirements.
- Reconfigure the intersection of Simpson Road at Joseph E. Lowery Boulevard:
 - To accommodate one 10-foot left turn lane with 125-foot storage, one 10-foot shared through and right turn lane on the westbound approach and 5-foot bike lanes on both sides of Simpson Road.
 - To accommodate one 12-foot shared through-left-right turn lane and 5-foot bike lane on the eastbound approach, the west receiving leg should accommodate one 10-foot through travel lane and 5-foot bike lane.
- At the intersection of Simpson Road at Chappell Road, increase the eastbound left-turn lane storage length to 100 feet.
- Install 10-foot left turn lanes on eastbound and westbound approaches with 100-foot storage at the intersection of Simpson Road at West Lake Avenue.

5. Traffic Analysis Technical Appendices

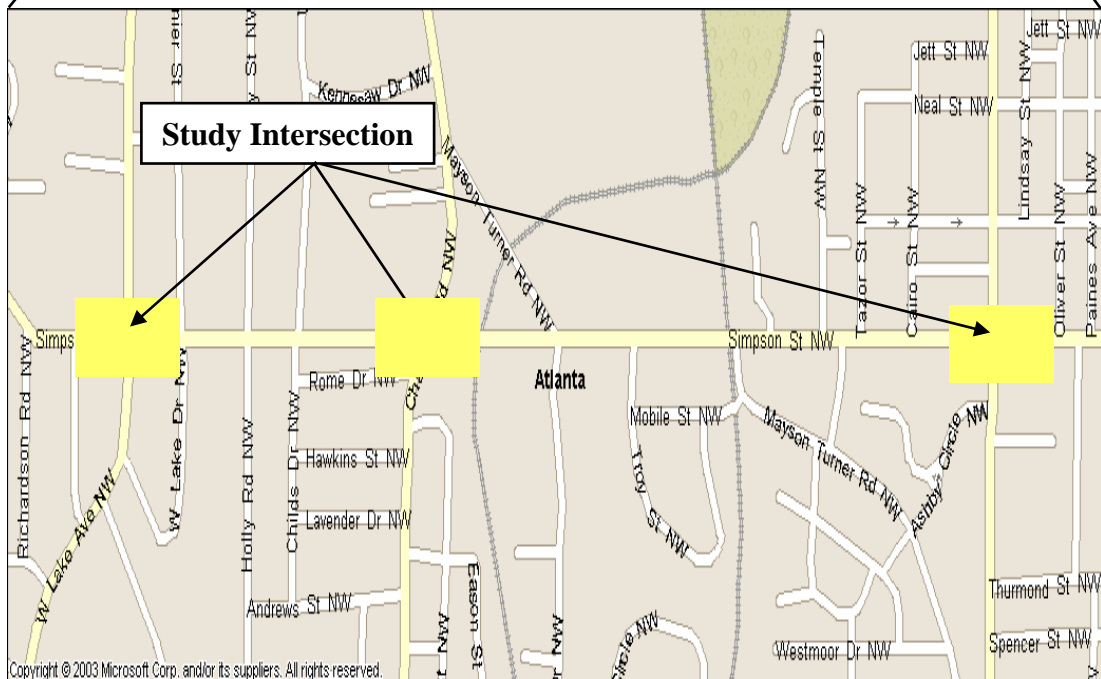
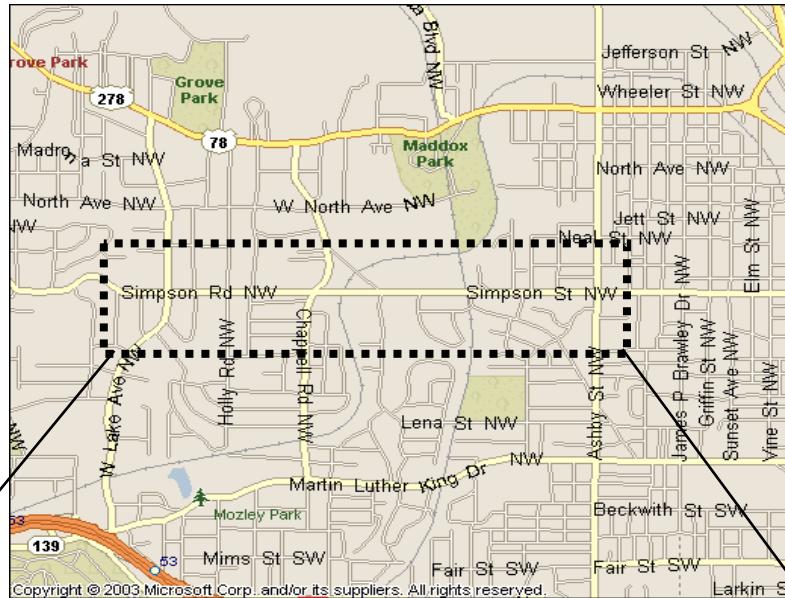
Appendices

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Appendix E – Capacity Analysis Results	E-1
Appendix F – Traffic Volume Summary	F-1



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix A Location Map – Figure 1





Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix B Intersection Photos Simpson Road at Joseph E. Lowery



Simpson Road Eastbound Approach



Simpson Road Westbound Approach



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix B Intersection Photos Simpson Road at Joseph E. Lowery



Joseph E Lowery Blvd Northbound Approach



Joseph E Lowery Blvd Southbound Approach



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix B Intersection Photos Simpson Road at Chappell Road



Simpson Road Eastbound Approach



Simpson Road Westbound Approach



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix B Intersection Photos Simpson Road at Chappell Road



Chappell Road Northbound Approach



Chappell Road Southbound Approach



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix B Intersection Photos Simpson Road at West Lake Ave



Simpson Road Eastbound Approach



Simpson Road Westbound Approach



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix B Intersection Photos Simpson Road at West lake Ave



West Lake Ave Northbound Approach

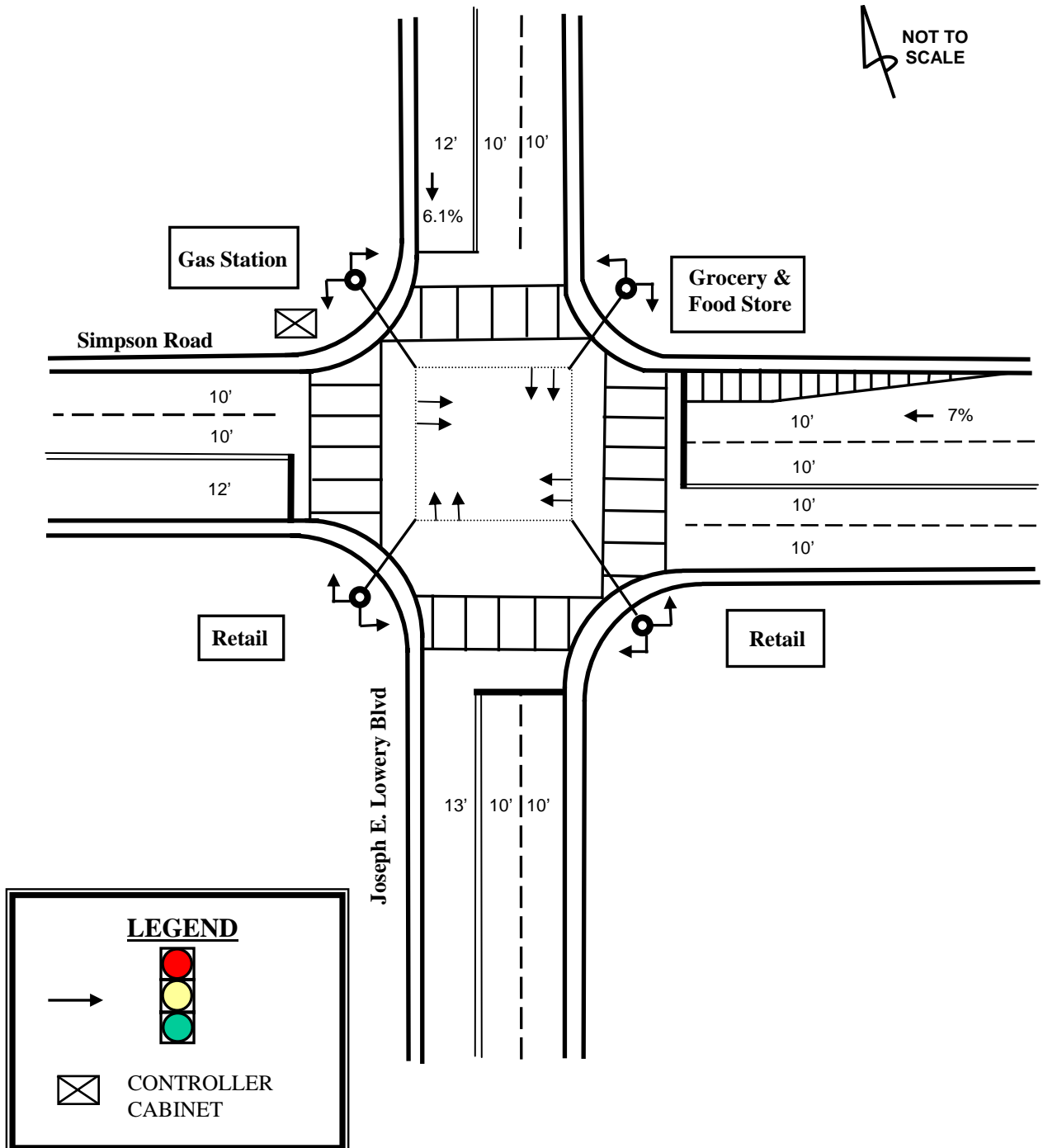


West Lake Ave Southbound Approach



Traffic Analysis For Simpson Road Corridor Study City of Atlanta

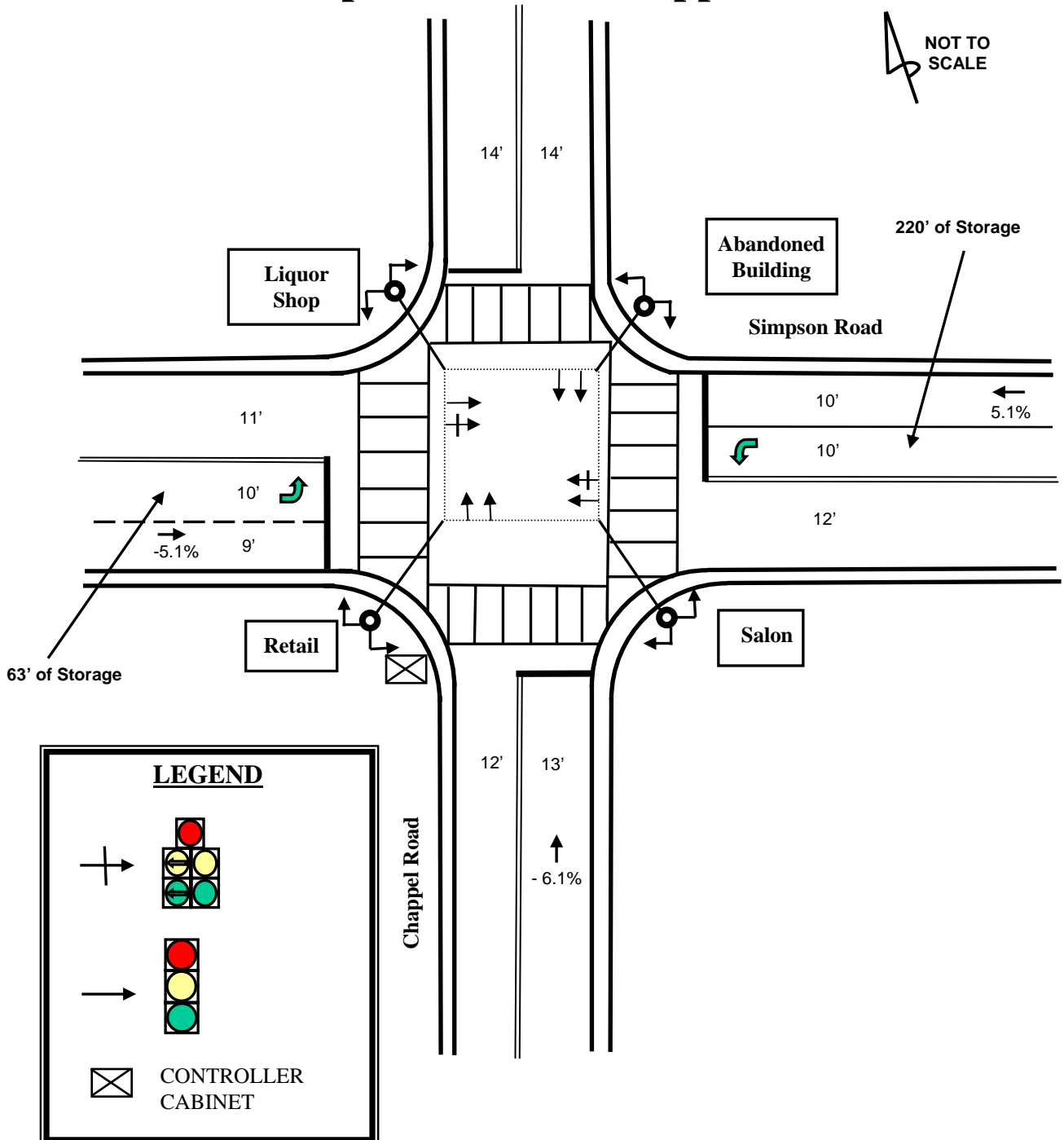
Appendix C Existing Conditions – Figure 2 Simpson Road at Joseph E. Lowery





Traffic Analysis For Simpson Road Corridor Study City of Atlanta

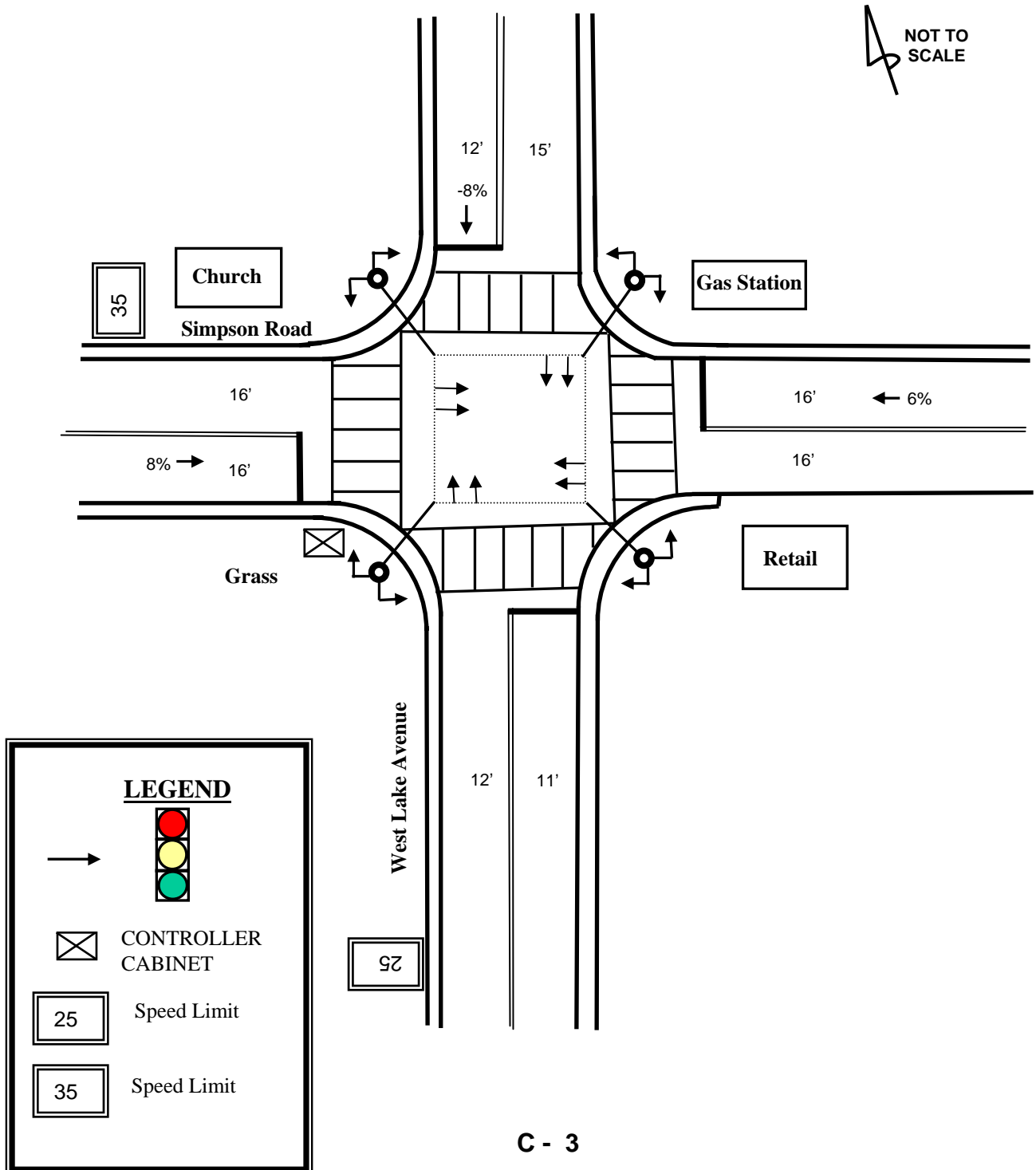
Appendix C Existing Conditions – Figure 3 Simpson Road at Chappell Road





Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix C Existing Conditions – Figure 4 Simpson Road at West Lake Avenue





Traffic Analysis For
Simpson Road Corridor Study
City of Atlanta

Appendix D
Proposed Improvements for
Forecasted Years – Figure 5

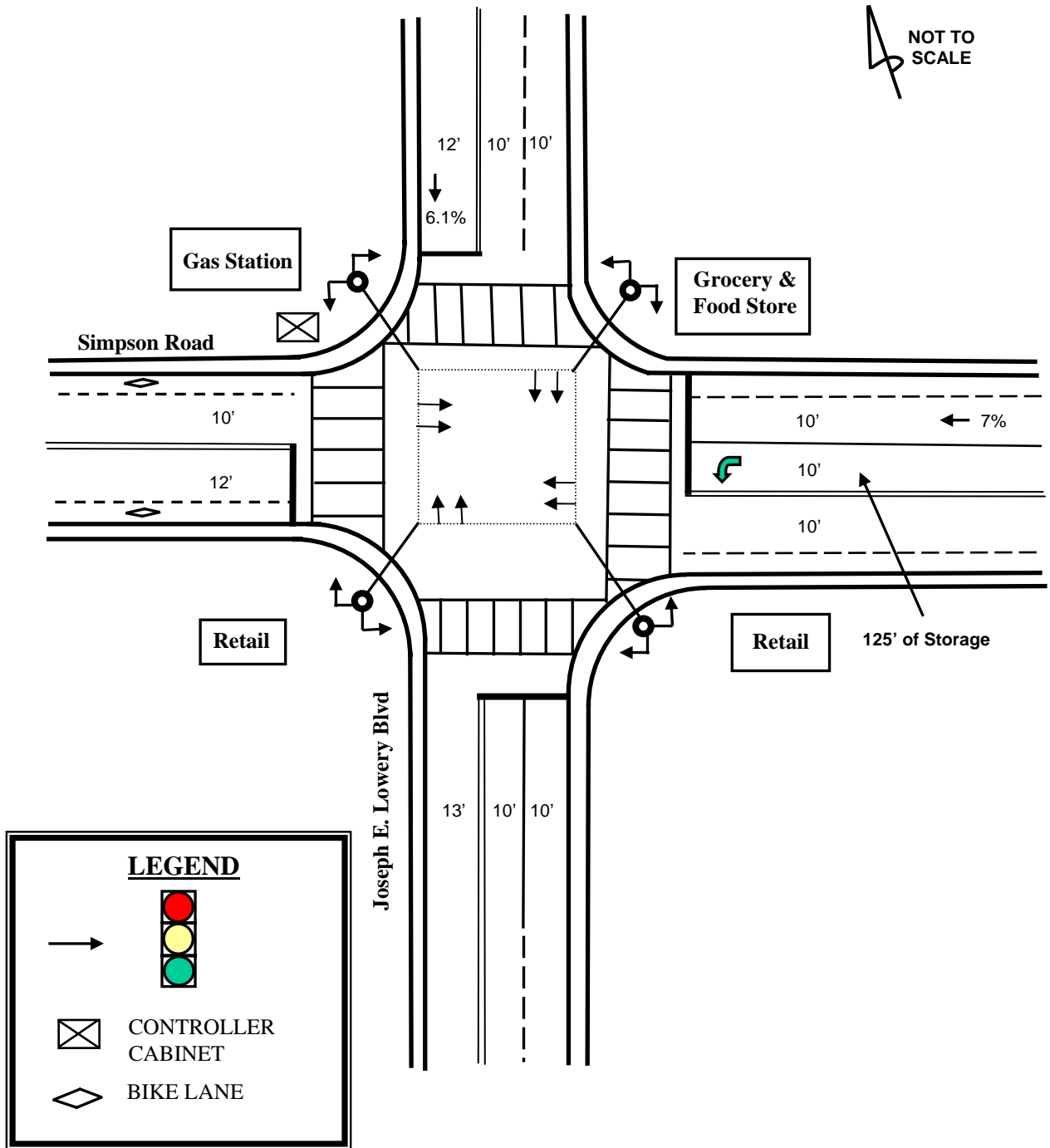
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Traffic Analysis For Simpson Road Corridor Study City of Atlanta

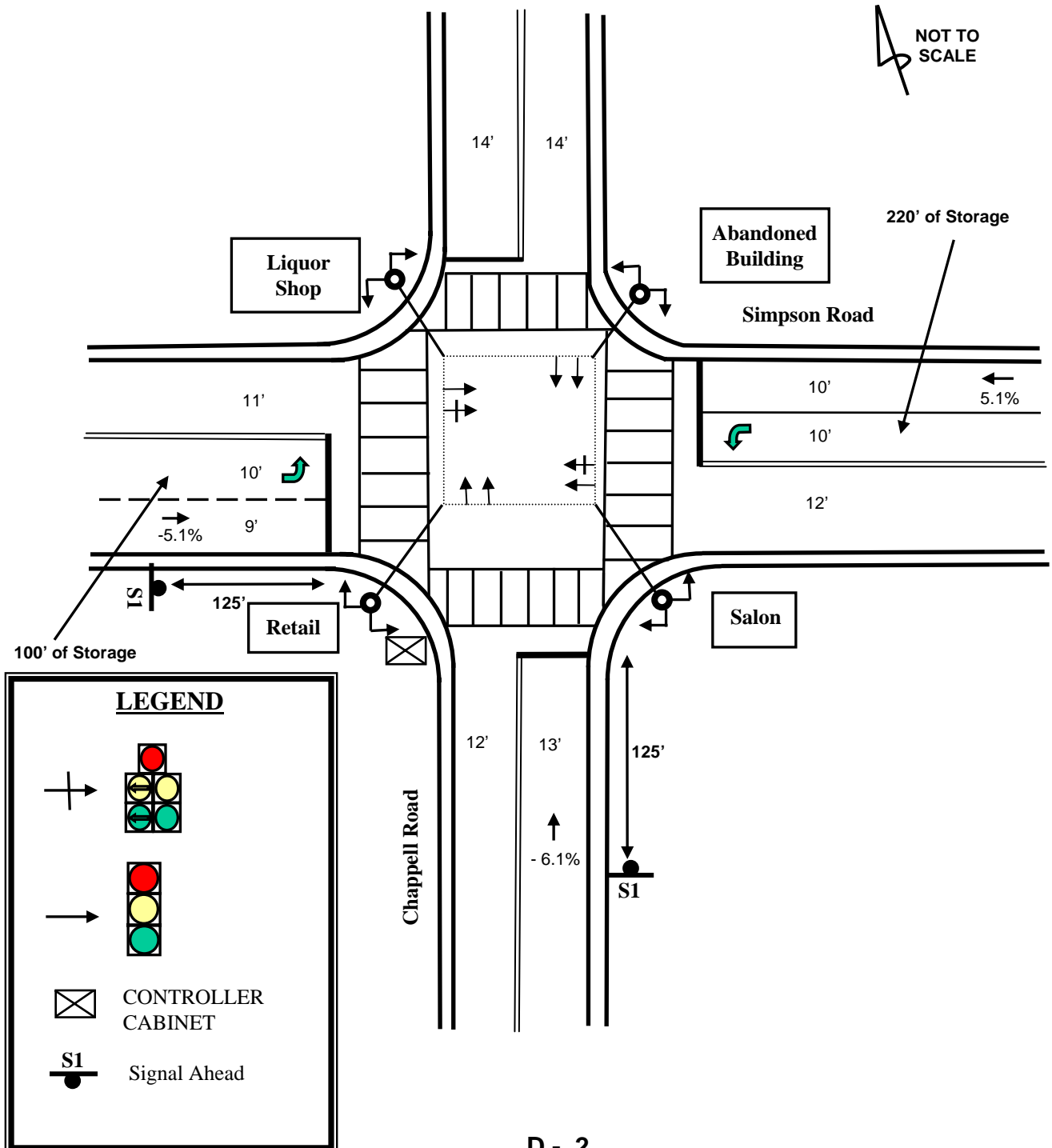
Appendix D Proposed Improvements – Figure 5 Simpson Road at Joseph E. Lowery





Traffic Analysis For Simpson Road Corridor Study City of Atlanta

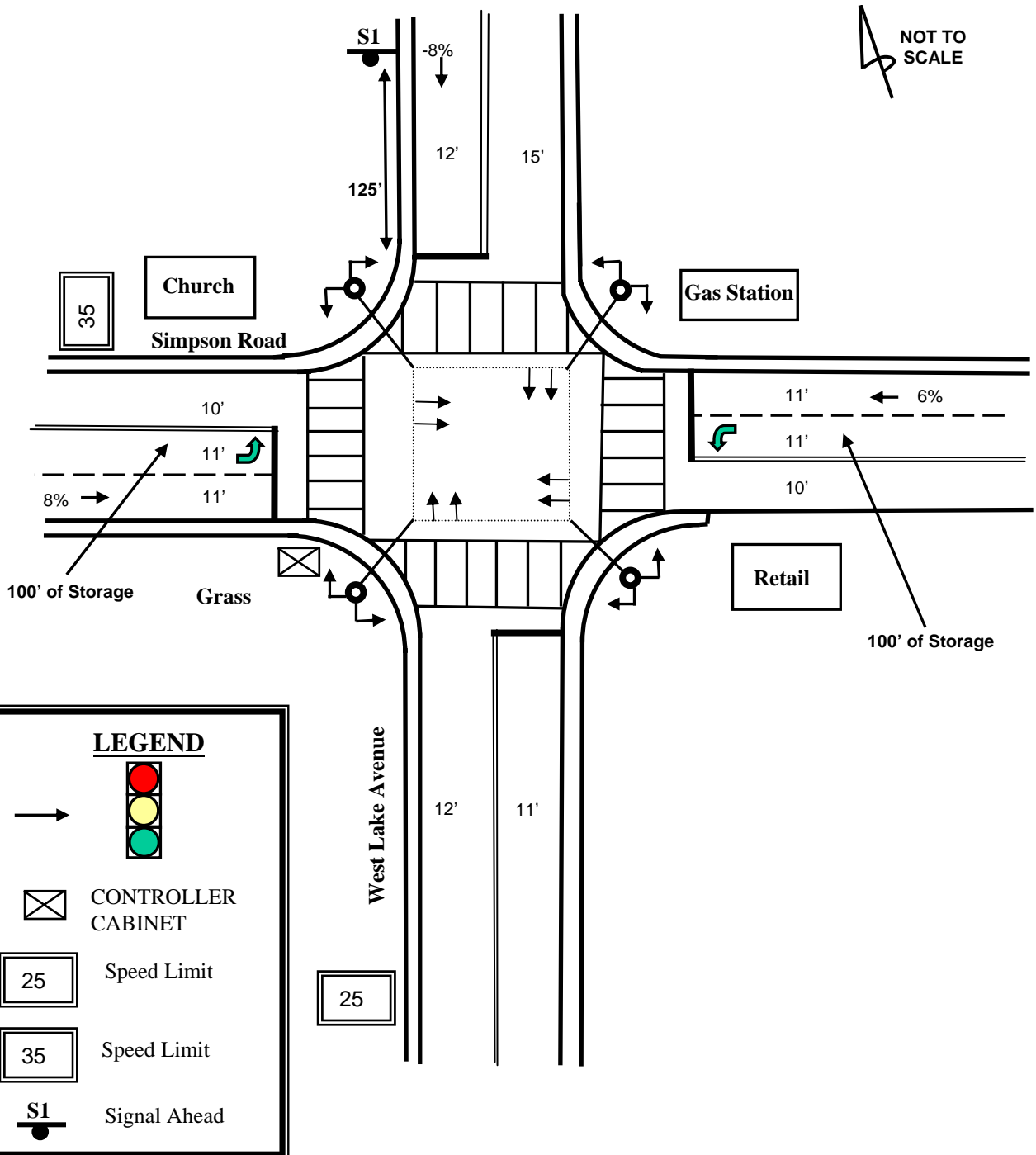
Appendix D Proposed Improvements – Figure 6 Simpson Road at Chappell Road





Traffic Analysis For Simpson Road Corridor Study City of Atlanta

Appendix D Proposed Improvements – Figure 7 Simpson Road at West Lake Avenue





Traffic Analysis For
Simpson Road Corridor Study
City of Atlanta

Appendix E
***Synchro* Analysis Results**
(See Attached Sheets)

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

Existing AM

4/11/2006

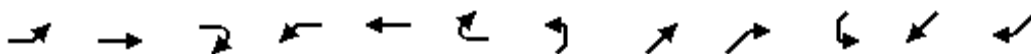


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.97			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1992			1970			1739			1890	
Flt Permitted		0.92			0.86			0.99			0.89	
Satd. Flow (perm)		1844			1714			1727			1700	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	239	21	62	124	42	9	280	93	50	207	35
RTOR Reduction (vph)	0	4	0	0	11	0	0	16	0	0	7	0
Lane Group Flow (vph)	0	307	0	0	217	0	0	366	0	0	285	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		26.0			26.0			32.0			32.0	
Effective Green, g (s)		28.0			28.0			34.0			34.0	
Actuated g/C Ratio		0.40			0.40			0.49			0.49	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		738			686			839			826	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.13			c0.21			0.17	
v/c Ratio		0.42			0.32			0.44			0.34	
Uniform Delay, d1		15.1			14.4			11.7			11.1	
Progression Factor		1.00			1.08			1.00			1.00	
Incremental Delay, d2		1.7			1.2			1.6			1.1	
Delay (s)		16.8			16.8			13.4			12.3	
Level of Service		B			B			B			B	
Approach Delay (s)		16.8			16.8			13.4			12.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay		14.6			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.43										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		62.7%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

Existing AM
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1693	1705		1610	1685			1941			1913	
Flt Permitted	0.69	1.00		0.53	1.00			0.98			0.99	
Satd. Flow (perm)	1234	1705		894	1685			1904			1893	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	220	12	27	96	4	15	149	24	5	73	27
RTOR Reduction (vph)	0	3	0	0	2	0	0	7	0	0	18	0
Lane Group Flow (vph)	59	229	0	27	98	0	0	181	0	0	87	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	30.0	20.0		30.0	20.0			22.0			22.0	
Effective Green, g (s)	34.0	22.0		34.0	22.0			24.0			24.0	
Actuated g/C Ratio	0.49	0.31		0.49	0.31			0.34			0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	678	536		557	530			653			649	
v/s Ratio Prot	c0.01	c0.13		0.01	0.06							
v/s Ratio Perm	0.03			0.02				c0.09			0.05	
v/c Ratio	0.09	0.43		0.05	0.18			0.28			0.13	
Uniform Delay, d1	9.6	19.0		9.5	17.5			16.7			15.8	
Progression Factor	0.53	0.85		2.20	1.78			1.00			1.00	
Incremental Delay, d2	0.2	2.3		0.2	0.7			1.1			0.4	
Delay (s)	5.4	18.4		21.0	31.8			17.8			16.3	
Level of Service	A	B		C	C			B			B	
Approach Delay (s)		15.7			29.5			17.8			16.3	
Approach LOS		B			C			B			B	

Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Simpson Road & Joseph E Lowery Blvd

Existing AM
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.99			0.97			0.97			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1830			3064			3207			1781	
Flt Permitted		0.95			0.85			0.94			0.89	
Satd. Flow (perm)		1745			2633			3006			1593	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	242	28	50	136	43	32	611	143	26	196	16
RTOR Reduction (vph)	0	6	0	0	26	0	0	27	0	0	4	0
Lane Group Flow (vph)	0	297	0	0	203	0	0	759	0	0	235	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		25.0			25.0			33.0			33.0	
Effective Green, g (s)		27.0			27.0			35.0			35.0	
Actuated g/C Ratio		0.39			0.39			0.50			0.50	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		673			1016			1503			797	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.08			c0.25			0.15	
v/c Ratio		0.44			0.20			0.50			0.29	
Uniform Delay, d1		15.9			14.3			11.7			10.3	
Progression Factor		1.34			1.00			1.00			1.00	
Incremental Delay, d2		2.0			0.4			1.2			0.9	
Delay (s)		23.4			14.7			12.9			11.2	
Level of Service		C			B			B			B	
Approach Delay (s)		23.4			14.7			12.9			11.2	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM Average Control Delay		15.0			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		61.7%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

Existing PM

4/11/2006



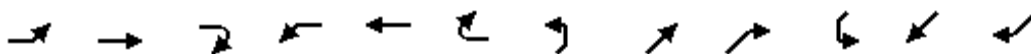
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.96			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1987			1985			1725			1891	
Flt Permitted		0.88			0.87			0.98			0.93	
Satd. Flow (perm)		1772			1755			1696			1770	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	116	12	125	289	64	12	253	113	52	393	72
RTOR Reduction (vph)	0	4	0	0	8	0	0	22	0	0	8	0
Lane Group Flow (vph)	0	153	0	0	470	0	0	356	0	0	509	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		28.0			28.0			30.0			30.0	
Effective Green, g (s)		30.0			30.0			32.0			32.0	
Actuated g/C Ratio		0.43			0.43			0.46			0.46	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		759			752			775			809	
v/s Ratio Prot												
v/s Ratio Perm		0.09			0.27			0.21			0.29	
v/c Ratio		0.20			0.62			0.46			0.63	
Uniform Delay, d1		12.5			15.6			13.1			14.5	
Progression Factor		1.00			1.11			1.00			1.00	
Incremental Delay, d2		0.6			3.7			2.0			3.7	
Delay (s)		13.1			21.0			15.0			18.2	
Level of Service		B			C			B			B	
Approach Delay (s)		13.1			21.0			15.0			18.2	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay		17.7			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		82.3%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

Existing PM
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1693	1689		1610	1680			1924			1929	
Flt Permitted	0.47	1.00		0.64	1.00			0.93			0.99	
Satd. Flow (perm)	833	1689		1086	1680			1795			1905	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	141	18	49	264	17	23	116	28	15	270	72
RTOR Reduction (vph)	0	7	0	0	3	0	0	10	0	0	13	0
Lane Group Flow (vph)	50	152	0	49	278	0	0	157	0	0	344	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	29.0	21.0		29.0	21.0			23.0			23.0	
Effective Green, g (s)	33.0	23.0		33.0	23.0			25.0			25.0	
Actuated g/C Ratio	0.47	0.33		0.47	0.33			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	516	555		587	552			641			680	
v/s Ratio Prot	c0.01	0.09		0.01	c0.17							
v/s Ratio Perm	0.03			0.03				0.09			c0.18	
v/c Ratio	0.10	0.27		0.08	0.50			0.24			0.51	
Uniform Delay, d1	10.2	17.3		10.1	18.9			15.8			17.7	
Progression Factor	1.01	0.97		2.06	1.75			1.00			1.00	
Incremental Delay, d2	0.4	1.1		0.2	2.7			0.9			2.7	
Delay (s)	10.7	18.0		21.0	35.7			16.8			20.3	
Level of Service	B	B		C	D			B			C	
Approach Delay (s)		16.3			33.5			16.8			20.3	
Approach LOS		B			C			B			C	

Intersection Summary

HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Simpson Road & Joseph E Lowery Blvd

Existing PM
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.96			0.98			0.96			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1789			3090			3159			1776	
Flt Permitted		0.93			0.75			0.82			0.96	
Satd. Flow (perm)		1664			2339			2605			1705	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	160	65	165	339	63	75	286	114	30	426	53
RTOR Reduction (vph)	0	18	0	0	14	0	0	43	0	0	6	0
Lane Group Flow (vph)	0	230	0	0	553	0	0	432	0	0	503	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		25.0			25.0			33.0			33.0	
Effective Green, g (s)		27.0			27.0			35.0			35.0	
Actuated g/C Ratio		0.39			0.39			0.50			0.50	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		642			902			1303			853	
v/s Ratio Prot												
v/s Ratio Perm		0.14			0.24			0.17			0.30	
v/c Ratio		0.36			0.61			0.33			0.59	
Uniform Delay, d1		15.3			17.3			10.5			12.4	
Progression Factor		1.11			1.00			1.00			1.00	
Incremental Delay, d2		1.5			3.1			0.7			3.0	
Delay (s)		18.6			20.4			11.2			15.4	
Level of Service		B			C			B			B	
Approach Delay (s)		18.6			20.4			11.2			15.4	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay		16.3			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		78.6%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

AM 2009 No Build

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.97			0.97			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1993			1969			1739			1890	
Flt Permitted		0.92			0.85			0.99			0.89	
Satd. Flow (perm)		1842			1706			1727			1700	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	101%	101%	101%	101%	101%	101%	101%	101%	101%
Adj. Flow (vph)	53	249	21	63	125	43	9	283	94	50	209	35
RTOR Reduction (vph)	0	4	0	0	12	0	0	16	0	0	7	0
Lane Group Flow (vph)	0	319	0	0	219	0	0	370	0	0	287	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		26.0			26.0			32.0			32.0	
Effective Green, g (s)		28.0			28.0			34.0			34.0	
Actuated g/C Ratio		0.40			0.40			0.49			0.49	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		737			682			839			826	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.13			c0.21			0.17	
v/c Ratio		0.43			0.32			0.44			0.35	
Uniform Delay, d1		15.2			14.5			11.8			11.1	
Progression Factor		1.00			1.08			1.00			1.00	
Incremental Delay, d2		1.9			1.2			1.7			1.2	
Delay (s)		17.1			16.9			13.5			12.3	
Level of Service		B			B			B			B	
Approach Delay (s)		17.1			16.9			13.5			12.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay		14.8			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.44										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		63.2%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

AM 2009 No Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1693	1705		1610	1685			1941			1914	
Flt Permitted	0.69	1.00		0.52	1.00			0.98			0.99	
Satd. Flow (perm)	1234	1705		889	1685			1904			1894	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	101%	101%	101%	100%	100%	100%	100%	100%	100%	101%	101%	101%
Adj. Flow (vph)	59	222	12	27	96	4	15	149	24	5	74	27
RTOR Reduction (vph)	0	3	0	0	2	0	0	7	0	0	18	0
Lane Group Flow (vph)	59	231	0	27	98	0	0	181	0	0	88	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	30.0	20.0		30.0	20.0			22.0			22.0	
Effective Green, g (s)	34.0	22.0		34.0	22.0			24.0			24.0	
Actuated g/C Ratio	0.49	0.31		0.49	0.31			0.34			0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	678	536		555	530			653			649	
v/s Ratio Prot	c0.01	c0.14		0.01	0.06							
v/s Ratio Perm	0.03			0.02				c0.09			0.05	
v/c Ratio	0.09	0.43		0.05	0.18			0.28			0.14	
Uniform Delay, d1	9.6	19.0		9.5	17.5			16.7			15.9	
Progression Factor	0.53	0.85		2.17	1.76			1.00			1.00	
Incremental Delay, d2	0.2	2.3		0.2	0.7			1.1			0.4	
Delay (s)	5.3	18.4		20.8	31.4			17.8			16.3	
Level of Service	A	B		C	C			B			B	
Approach Delay (s)		15.8			29.2			17.8			16.3	
Approach LOS		B			C			B			B	

Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

9: Simpson Road & Joseph E Lowery Blvd

AM 2009 No Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.99			0.97			0.97			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1829			3064			3206			1780	
Flt Permitted		0.95			0.85			0.94			0.89	
Satd. Flow (perm)		1745			2620			3005			1585	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	104%	104%	104%	101%	101%	101%	102%	102%	102%
Adj. Flow (vph)	33	247	29	52	141	45	32	617	145	27	200	17
RTOR Reduction (vph)	0	5	0	0	27	0	0	27	0	0	4	0
Lane Group Flow (vph)	0	304	0	0	211	0	0	767	0	0	240	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		26.0			26.0			32.0			32.0	
Effective Green, g (s)		28.0			28.0			34.0			34.0	
Actuated g/C Ratio		0.40			0.40			0.49			0.49	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		698			1048			1460			770	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.08			c0.26			0.15	
v/c Ratio		0.43			0.20			0.53			0.31	
Uniform Delay, d1		15.3			13.7			12.4			10.9	
Progression Factor		1.20			1.00			1.00			1.00	
Incremental Delay, d2		1.9			0.4			1.4			1.1	
Delay (s)		20.1			14.1			13.8			12.0	
Level of Service		C			B			B			B	
Approach Delay (s)		20.1			14.1			13.8			12.0	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM Average Control Delay		14.8			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		62.9%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

PM 2009 No Build

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.96			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1988			1985			1725			1892	
Flt Permitted		0.88			0.87			0.98			0.93	
Satd. Flow (perm)		1764			1756			1696			1767	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	101%	101%	101%	101%	101%	101%	101%	101%	101%
Adj. Flow (vph)	31	121	12	126	292	65	12	256	114	53	397	72
RTOR Reduction (vph)	0	4	0	0	8	0	0	22	0	0	8	0
Lane Group Flow (vph)	0	160	0	0	475	0	0	360	0	0	514	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		28.0			28.0			30.0			30.0	
Effective Green, g (s)		30.0			30.0			32.0			32.0	
Actuated g/C Ratio		0.43			0.43			0.46			0.46	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		756			753			775			808	
v/s Ratio Prot												
v/s Ratio Perm		0.09			0.27			0.21			0.29	
v/c Ratio		0.21			0.63			0.46			0.64	
Uniform Delay, d1		12.6			15.7			13.1			14.5	
Progression Factor		1.00			1.10			1.00			1.00	
Incremental Delay, d2		0.6			3.8			2.0			3.8	
Delay (s)		13.2			21.1			15.1			18.3	
Level of Service		B			C			B			B	
Approach Delay (s)		13.2			21.1			15.1			18.3	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay		17.9			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		87.8%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

PM 2009 No Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1693	1688		1610	1680			1924			1929	
Flt Permitted	0.47	1.00		0.64	1.00			0.93			0.99	
Satd. Flow (perm)	833	1688		1078	1680			1794			1906	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	101%	101%	101%	100%	100%	100%	100%	100%	100%	101%	101%	101%
Adj. Flow (vph)	50	143	19	49	264	17	23	116	28	15	272	72
RTOR Reduction (vph)	0	7	0	0	3	0	0	10	0	0	13	0
Lane Group Flow (vph)	50	155	0	49	278	0	0	157	0	0	346	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	29.0	21.0		29.0	21.0			23.0			23.0	
Effective Green, g (s)	33.0	23.0		33.0	23.0			25.0			25.0	
Actuated g/C Ratio	0.47	0.33		0.47	0.33			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	516	555		584	552			641			681	
v/s Ratio Prot	c0.01	0.09		0.01	c0.17							
v/s Ratio Perm	0.03			0.03				0.09			c0.18	
v/c Ratio	0.10	0.28		0.08	0.50			0.24			0.51	
Uniform Delay, d1	10.2	17.4		10.1	18.9			15.8			17.7	
Progression Factor	1.02	0.98		2.04	1.74			1.00			1.00	
Incremental Delay, d2	0.3	1.2		0.2	2.6			0.9			2.7	
Delay (s)	10.8	18.1		20.8	35.6			16.8			20.4	
Level of Service	B	B		C	D			B			C	
Approach Delay (s)		16.4			33.4			16.8			20.4	
Approach LOS		B			C			B			C	

Intersection Summary

HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

PM 2009 No Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.96			0.98			0.96			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1788			3089			3160			1776	
Flt Permitted		0.92			0.74			0.81			0.96	
Satd. Flow (perm)		1661			2328			2590			1703	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	104%	104%	104%	101%	101%	101%	102%	102%	102%
Adj. Flow (vph)	23	163	67	172	353	66	76	289	115	31	435	54
RTOR Reduction (vph)	0	18	0	0	14	0	0	43	0	0	6	0
Lane Group Flow (vph)	0	235	0	0	577	0	0	437	0	0	514	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		25.0			25.0			33.0			33.0	
Effective Green, g (s)		27.0			27.0			35.0			35.0	
Actuated g/C Ratio		0.39			0.39			0.50			0.50	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		641			898			1295			852	
v/s Ratio Prot												
v/s Ratio Perm		0.14			0.25			0.17			0.30	
v/c Ratio		0.37			0.64			0.34			0.60	
Uniform Delay, d1		15.4			17.6			10.5			12.5	
Progression Factor		1.12			1.00			1.00			1.00	
Incremental Delay, d2		1.6			3.5			0.7			3.2	
Delay (s)		18.8			21.1			11.2			15.7	
Level of Service		B			C			B			B	
Approach Delay (s)		18.8			21.1			11.2			15.7	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay		16.7			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		80.0%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

AM 2009 Build

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.97			0.97			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1993			1969			1739			1890	
Flt Permitted		0.92			0.85			0.99			0.88	
Satd. Flow (perm)		1851			1695			1722			1682	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	101%	101%	101%	101%	101%	101%	101%	101%	101%
Adj. Flow (vph)	53	249	21	63	125	43	9	283	94	50	209	35
RTOR Reduction (vph)	0	5	0	0	16	0	0	29	0	0	12	0
Lane Group Flow (vph)	0	318	0	0	215	0	0	357	0	0	282	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		20.0			20.0			13.0			13.0	
Effective Green, g (s)		22.0			22.0			15.0			15.0	
Actuated g/C Ratio		0.49			0.49			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		905			829			574			561	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.13			c0.21			0.17	
v/c Ratio		0.35			0.26			0.62			0.50	
Uniform Delay, d1		7.1			6.7			12.6			12.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.8			2.1			0.7	
Delay (s)		7.3			7.5			14.7			12.7	
Level of Service		A			A			B			B	
Approach Delay (s)		7.3			7.5			14.7			12.7	
Approach LOS		A			A			B			B	

Intersection Summary

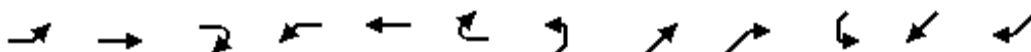
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

AM 2009 Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1693	1705		1610	1685			1941			1914	
Flt Permitted	0.69	1.00		0.61	1.00			0.97			0.98	
Satd. Flow (perm)	1234	1705		1039	1685			1885			1889	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	101%	101%	101%	100%	100%	100%	100%	100%	100%	101%	101%	101%
Adj. Flow (vph)	59	222	12	27	96	4	15	149	24	5	74	27
RTOR Reduction (vph)	0	2	0	0	2	0	0	11	0	0	22	0
Lane Group Flow (vph)	59	232	0	27	98	0	0	177	0	0	84	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	30.2	26.6		26.2	24.6			8.8			8.8	
Effective Green, g (s)	34.2	28.6		30.2	26.6			10.8			10.8	
Actuated g/C Ratio	0.62	0.52		0.55	0.48			0.20			0.20	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	814	887		608	815			370			371	
v/s Ratio Prot	c0.01	c0.14		0.00	0.06							
v/s Ratio Perm	0.04			0.02				c0.09			0.04	
v/c Ratio	0.07	0.26		0.04	0.12			0.48			0.23	
Uniform Delay, d1	4.1	7.3		5.7	7.8			19.6			18.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.7		0.0	0.3			1.0			0.3	
Delay (s)	4.2	8.0		5.8	8.1			20.6			18.9	
Level of Service	A	A		A	A			C			B	
Approach Delay (s)		7.3			7.6			20.6			18.9	
Approach LOS		A			A			C			B	

Intersection Summary

HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Simpson Road & Joseph E Lowery Blvd

AM 2009 Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			0.95		1.00	1.00	
Frt	1.00	0.98		1.00	0.96			0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	1833		1594	3072			3206		1717	1786	
Flt Permitted	0.63	1.00		0.49	1.00			0.93		0.28	1.00	
Satd. Flow (perm)	1182	1833		828	3072			3004		500	1786	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	104%	104%	104%	101%	101%	101%	102%	102%	102%
Adj. Flow (vph)	33	247	29	52	141	45	32	617	145	27	200	17
RTOR Reduction (vph)	0	4	0	0	27	0	0	19	0	0	3	0
Lane Group Flow (vph)	33	272	0	52	159	0	0	775	0	27	214	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	39.0	39.0		39.0	39.0			49.0		49.0	49.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			51.0		51.0	51.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lane Grp Cap (vph)	485	752		339	1260			1532		255	911	
v/s Ratio Prot		c0.15			0.05						0.12	
v/s Ratio Perm	0.03			0.06				c0.26		0.05		
v/c Ratio	0.07	0.36		0.15	0.13			0.51		0.11	0.23	
Uniform Delay, d1	17.9	20.4		18.6	18.4			16.2		12.7	13.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.3		1.0	0.2			1.2		0.8	0.6	
Delay (s)	18.2	21.8		19.5	18.6			17.4		13.5	14.2	
Level of Service	B	C		B	B			B		B	B	
Approach Delay (s)		21.4			18.8			17.4			14.2	
Approach LOS		C			B			B			B	

Intersection Summary

HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

PM 2009 Build

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.96			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1988			1985			1725			1892	
Flt Permitted		0.88			0.87			0.98			0.94	
Satd. Flow (perm)		1760			1750			1695			1780	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	101%	101%	101%	101%	101%	101%	101%	101%	101%
Adj. Flow (vph)	31	121	12	126	292	65	12	256	114	53	397	72
RTOR Reduction (vph)	0	6	0	0	12	0	0	36	0	0	13	0
Lane Group Flow (vph)	0	158	0	0	471	0	0	346	0	0	509	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		18.1			18.1			14.9			14.9	
Effective Green, g (s)		20.1			20.1			16.9			16.9	
Actuated g/C Ratio		0.45			0.45			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		786			782			637			668	
v/s Ratio Prot												
v/s Ratio Perm		0.09			0.27			0.20			0.29	
v/c Ratio		0.20			0.60			0.54			0.76	
Uniform Delay, d1		7.6			9.4			11.0			12.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			3.4			1.0			5.1	
Delay (s)		7.7			12.8			12.0			17.4	
Level of Service		A			B			B			B	
Approach Delay (s)		7.7			12.8			12.0			17.4	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

PM 2009 Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1693	1688		1610	1680			1924			1929	
Flt Permitted	0.54	1.00		0.65	1.00			0.92			0.98	
Satd. Flow (perm)	960	1688		1109	1680			1774			1901	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	101%	101%	101%	100%	100%	100%	100%	100%	100%	101%	101%	101%
Adj. Flow (vph)	50	143	19	49	264	17	23	116	28	15	272	72
RTOR Reduction (vph)	0	8	0	0	3	0	0	14	0	0	17	0
Lane Group Flow (vph)	50	154	0	49	278	0	0	153	0	0	342	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	23.5	21.1		23.5	21.1			13.5			13.5	
Effective Green, g (s)	27.5	23.1		27.5	23.1			15.5			15.5	
Actuated g/C Ratio	0.50	0.42		0.50	0.42			0.28			0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	539	709		595	706			500			536	
v/s Ratio Prot	c0.01	0.09		0.01	c0.17							
v/s Ratio Perm	0.04			0.03				0.09			c0.18	
v/c Ratio	0.09	0.22		0.08	0.39			0.31			0.64	
Uniform Delay, d1	8.3	10.2		7.2	11.1			15.5			17.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.7		0.1	1.6			0.3			2.5	
Delay (s)	8.3	10.9		7.3	12.7			15.9			19.8	
Level of Service	A	B		A	B			B			B	
Approach Delay (s)		10.3			11.9			15.9			19.8	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Simpson Road & Joseph E Lowery Blvd

PM 2009 Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			0.95		1.00	1.00	
Frt	1.00	0.96		1.00	0.98			0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	1781		1594	3112			3160		1717	1777	
Flt Permitted	0.45	1.00		0.55	1.00			0.75		0.44	1.00	
Satd. Flow (perm)	847	1781		915	3112			2389		796	1777	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	104%	104%	104%	101%	101%	101%	102%	102%	102%
Adj. Flow (vph)	23	163	67	172	353	66	76	289	115	31	435	54
RTOR Reduction (vph)	0	15	0	0	15	0	0	30	0	0	4	0
Lane Group Flow (vph)	23	215	0	172	404	0	0	450	0	31	485	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	39.0	39.0		39.0	39.0			49.0		49.0	49.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			51.0		51.0	51.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lane Grp Cap (vph)	347	730		375	1276			1218		406	906	
v/s Ratio Prot		0.12			0.13						c0.27	
v/s Ratio Perm	0.03			c0.19				0.19		0.04		
v/c Ratio	0.07	0.29		0.46	0.32			0.37		0.08	0.53	
Uniform Delay, d1	17.9	19.8		21.4	20.0			14.8		12.5	16.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.4	1.0		4.0	0.7			0.9		0.4	2.3	
Delay (s)	18.3	20.8		25.4	20.7			15.7		12.9	18.8	
Level of Service	B	C		C	C			B		B	B	
Approach Delay (s)		20.6			22.0			15.7			18.4	
Approach LOS		C			C			B			B	

Intersection Summary

HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

AM 2012 No Build

1: Simpson Road & West lake

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.97			0.97			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1992			1970			1739			1890	
Flt Permitted		0.91			0.85			0.99			0.89	
Satd. Flow (perm)		1838			1698			1727			1692	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	108%	108%	108%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	55	258	22	64	128	44	9	289	96	52	213	36
RTOR Reduction (vph)	0	4	0	0	12	0	0	16	0	0	7	0
Lane Group Flow (vph)	0	331	0	0	224	0	0	378	0	0	294	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		26.0			26.0			32.0			32.0	
Effective Green, g (s)		28.0			28.0			34.0			34.0	
Actuated g/C Ratio		0.40			0.40			0.49			0.49	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		735			679			839			822	
v/s Ratio Prot												
v/s Ratio Perm		c0.18			0.13			c0.22			0.17	
v/c Ratio		0.45			0.33			0.45			0.36	
Uniform Delay, d1		15.4			14.5			11.8			11.2	
Progression Factor		1.00			1.08			1.00			1.00	
Incremental Delay, d2		2.0			1.3			1.7			1.2	
Delay (s)		17.4			17.0			13.6			12.4	
Level of Service		B			B			B			B	
Approach Delay (s)		17.4			17.0			13.6			12.4	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay		14.9			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.45										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		64.2%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

AM 2012 No Build
4/11/2006



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1693	1705		1610	1685			1941			1913	
Flt Permitted	0.69	1.00		0.52	1.00			0.98			0.98	
Satd. Flow (perm)	1233	1705		879	1685			1904			1888	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	103%	103%	103%	101%	101%	101%	101%	101%	101%	103%	103%	103%
Adj. Flow (vph)	60	226	12	27	97	4	15	150	24	6	75	28
RTOR Reduction (vph)	0	3	0	0	2	0	0	7	0	0	18	0
Lane Group Flow (vph)	60	235	0	27	99	0	0	182	0	0	91	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	30.0	20.0		30.0	20.0			22.0			22.0	
Effective Green, g (s)	34.0	22.0		34.0	22.0			24.0			24.0	
Actuated g/C Ratio	0.49	0.31		0.49	0.31			0.34			0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	678	536		552	530			653			647	
v/s Ratio Prot	c0.02	c0.14		0.01	0.06							
v/s Ratio Perm	0.03			0.02				c0.10			0.05	
v/c Ratio	0.09	0.44		0.05	0.19			0.28			0.14	
Uniform Delay, d1	9.6	19.1		9.5	17.5			16.7			15.9	
Progression Factor	0.53	0.85		2.22	1.78			1.00			1.00	
Incremental Delay, d2	0.2	2.4		0.2	0.8			1.1			0.5	
Delay (s)	5.3	18.6		21.2	31.8			17.8			16.3	
Level of Service	A	B		C	C			B			B	
Approach Delay (s)		15.9			29.6			17.8			16.3	
Approach LOS		B			C			B			B	

Intersection Summary

HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

AM 2012 No Build
4/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.99			0.97			0.97			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1830			3063			3206			1780	
Flt Permitted		0.95			0.84			0.94			0.88	
Satd. Flow (perm)		1741			2614			3005			1582	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	107%	107%	107%	104%	104%	104%	103%	103%	103%
Adj. Flow (vph)	34	252	29	54	145	47	33	635	149	27	202	17
RTOR Reduction (vph)	0	5	0	0	29	0	0	28	0	0	4	0
Lane Group Flow (vph)	0	310	0	0	217	0	0	790	0	0	242	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		25.0			25.0			33.0			33.0	
Effective Green, g (s)		27.0			27.0			35.0			35.0	
Actuated g/C Ratio		0.39			0.39			0.50			0.50	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		672			1008			1503			791	
v/s Ratio Prot												
v/s Ratio Perm		c0.18			0.08			c0.26			0.15	
v/c Ratio		0.46			0.22			0.53			0.31	
Uniform Delay, d1		16.1			14.4			11.9			10.3	
Progression Factor		1.35			1.00			1.00			1.00	
Incremental Delay, d2		2.2			0.5			1.3			1.0	
Delay (s)		23.8			14.9			13.2			11.3	
Level of Service		C			B			B			B	
Approach Delay (s)		23.8			14.9			13.2			11.3	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM Average Control Delay		15.2			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		63.7%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

PM 2012 No Build

1: Simpson Road & West lake

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.96			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1987			1985			1726			1891	
Flt Permitted		0.89			0.87			0.98			0.93	
Satd. Flow (perm)		1781			1759			1696			1767	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	108%	108%	108%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	32	126	13	129	298	66	12	261	116	54	405	74
RTOR Reduction (vph)	0	4	0	0	8	0	0	22	0	0	8	0
Lane Group Flow (vph)	0	167	0	0	485	0	0	367	0	0	525	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		26.0			26.0			32.0			32.0	
Effective Green, g (s)		28.0			28.0			34.0			34.0	
Actuated g/C Ratio		0.40			0.40			0.49			0.49	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		712			704			824			858	
v/s Ratio Prot												
v/s Ratio Perm		0.09			0.28			0.22			0.30	
v/c Ratio		0.23			0.69			0.45			0.61	
Uniform Delay, d1		13.9			17.4			11.8			13.2	
Progression Factor		1.00			1.04			1.00			1.00	
Incremental Delay, d2		0.8			5.1			1.7			3.2	
Delay (s)		14.7			23.2			13.6			16.4	
Level of Service		B			C			B			B	
Approach Delay (s)		14.7			23.2			13.6			16.4	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay		17.6			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		89.5%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

PM 2012 No Build
4/11/2006



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1693	1689		1610	1679			1924			1929	
Flt Permitted	0.45	1.00		0.63	1.00			0.93			0.98	
Satd. Flow (perm)	804	1689		1064	1679			1807			1903	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	103%	103%	103%	101%	101%	101%	101%	101%	101%	103%	103%	103%
Adj. Flow (vph)	52	146	19	49	267	18	23	117	29	16	278	74
RTOR Reduction (vph)	0	7	0	0	3	0	0	11	0	0	13	0
Lane Group Flow (vph)	52	158	0	49	282	0	0	158	0	0	355	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	30.0	20.0		30.0	20.0			22.0			22.0	
Effective Green, g (s)	34.0	22.0		34.0	22.0			24.0			24.0	
Actuated g/C Ratio	0.49	0.31		0.49	0.31			0.34			0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	543	531		610	528			620			652	
v/s Ratio Prot	c0.02	0.09		0.01	c0.17							
v/s Ratio Perm	0.03			0.03				0.09			c0.19	
v/c Ratio	0.10	0.30		0.08	0.53			0.26			0.54	
Uniform Delay, d1	9.7	18.2		9.6	19.8			16.6			18.6	
Progression Factor	0.89	0.92		2.00	1.70			1.00			1.00	
Incremental Delay, d2	0.3	1.3		0.2	3.0			1.0			3.2	
Delay (s)	9.0	18.0		19.3	36.7			17.6			21.8	
Level of Service	A	B		B	D			B			C	
Approach Delay (s)		15.9			34.1			17.6			21.8	
Approach LOS		B			C			B			C	

Intersection Summary

HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

PM 2012 No Build
4/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.96			0.98			0.96			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1788			3090			3159			1776	
Flt Permitted		0.92			0.74			0.81			0.96	
Satd. Flow (perm)		1653			2318			2578			1701	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	107%	107%	107%	104%	104%	104%	103%	103%	103%
Adj. Flow (vph)	24	166	68	177	363	67	78	297	119	31	439	55
RTOR Reduction (vph)	0	18	0	0	14	0	0	44	0	0	6	0
Lane Group Flow (vph)	0	240	0	0	593	0	0	451	0	0	519	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		25.0			25.0			33.0			33.0	
Effective Green, g (s)		27.0			27.0			35.0			35.0	
Actuated g/C Ratio		0.39			0.39			0.50			0.50	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		638			894			1289			851	
v/s Ratio Prot												
v/s Ratio Perm		0.14			0.26			0.17			0.31	
v/c Ratio		0.38			0.66			0.35			0.61	
Uniform Delay, d1		15.4			17.8			10.6			12.6	
Progression Factor		1.14			1.00			1.00			1.00	
Incremental Delay, d2		1.7			3.9			0.7			3.2	
Delay (s)		19.3			21.6			11.4			15.8	
Level of Service		B			C			B			B	
Approach Delay (s)		19.3			21.6			11.4			15.8	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay		17.0			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		81.4%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1699	2003		1717	1969		1770	1733		1840	1895	
Flt Permitted	0.65	1.00		0.58	1.00		0.57	1.00		0.39	1.00	
Satd. Flow (perm)	1160	2003		1050	1969		1065	1733		747	1895	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	108%	108%	108%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	55	258	22	64	128	44	9	289	96	52	213	36
RTOR Reduction (vph)	0	6	0	0	22	0	0	29	0	0	15	0
Lane Group Flow (vph)	55	274	0	64	150	0	9	356	0	52	234	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	20.0	20.0		20.0	20.0		13.0	13.0		13.0	13.0	
Effective Green, g (s)	22.0	22.0		22.0	22.0		15.0	15.0		15.0	15.0	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.33	0.33		0.33	0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	567	979		513	963		355	578		249	632	
v/s Ratio Prot		c0.14			0.08			c0.21			0.12	
v/s Ratio Perm	0.05			0.06			0.01			0.07		
v/c Ratio	0.10	0.28		0.12	0.16		0.03	0.62		0.21	0.37	
Uniform Delay, d1	6.2	6.8		6.3	6.4		10.1	12.6		10.7	11.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.7		0.5	0.3		0.0	2.0		0.4	0.4	
Delay (s)	6.5	7.5		6.8	6.7		10.1	14.5		11.2	11.8	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		7.4			6.7			14.4			11.7	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

AM 2012 Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1693	1705		1610	1685		1823	1942		1770	1906	
Flt Permitted	0.69	1.00		0.51	1.00		0.69	1.00		0.58	1.00	
Satd. Flow (perm)	1233	1705		870	1685		1319	1942		1082	1906	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	103%	103%	103%	101%	101%	101%	101%	101%	101%	103%	103%	103%
Adj. Flow (vph)	60	226	12	27	97	4	15	150	24	6	75	28
RTOR Reduction (vph)	0	2	0	0	1	0	0	5	0	0	14	0
Lane Group Flow (vph)	60	236	0	27	100	0	15	169	0	6	89	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	52.0	34.0		52.0	34.0		30.0	30.0		30.0	30.0	
Effective Green, g (s)	56.0	36.0		56.0	36.0		32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.56	0.36		0.56	0.36		0.32	0.32		0.32	0.32	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	782	614		635	607		422	621		346	610	
v/s Ratio Prot	c0.02	c0.14		0.01	0.06			c0.09			0.05	
v/s Ratio Perm	0.03			0.02			0.01			0.01		
v/c Ratio	0.08	0.38		0.04	0.16		0.04	0.27		0.02	0.15	
Uniform Delay, d1	10.0	23.8		10.0	21.8		23.4	25.3		23.2	24.3	
Progression Factor	1.00	1.00		0.86	0.86		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.8		0.1	0.6		0.2	1.1		0.1	0.5	
Delay (s)	10.2	25.6		8.7	19.2		23.5	26.4		23.3	24.8	
Level of Service	B	C		A	B		C	C		C	C	
Approach Delay (s)		22.5			17.0			26.2			24.7	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

AM 2012 Build
4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			0.95		1.00	1.00	
Frt	1.00	0.98		1.00	0.96			0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	1834		1594	3071			3206		1717	1786	
Flt Permitted	0.63	1.00		0.49	1.00			0.93		0.27	1.00	
Satd. Flow (perm)	1175	1834		819	3071			3003		482	1786	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	107%	107%	107%	104%	104%	104%	103%	103%	103%
Adj. Flow (vph)	34	252	29	54	145	47	33	635	149	27	202	17
RTOR Reduction (vph)	0	4	0	0	28	0	0	19	0	0	3	0
Lane Group Flow (vph)	34	277	0	54	164	0	0	798	0	27	216	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	39.0	39.0		39.0	39.0			49.0		49.0	49.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			51.0		51.0	51.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lane Grp Cap (vph)	482	752		336	1259			1532		246	911	
v/s Ratio Prot		c0.15			0.05						0.12	
v/s Ratio Perm	0.03			0.07				c0.27		0.06		
v/c Ratio	0.07	0.37		0.16	0.13			0.52		0.11	0.24	
Uniform Delay, d1	17.9	20.5		18.6	18.4			16.3		12.7	13.7	
Progression Factor	0.35	0.45		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.3		1.0	0.2			1.3		0.9	0.6	
Delay (s)	6.6	10.7		19.7	18.6			17.6		13.6	14.3	
Level of Service	A	B		B	B			B		B	B	
Approach Delay (s)		10.2			18.8			17.6			14.2	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay			15.8			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			62.6%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: Simpson Road & West lake

PM 2012 Build

4/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1699	1998		1717	1992		1770	1718		1840	1892	
Flt Permitted	0.49	1.00		0.67	1.00		0.30	1.00		0.42	1.00	
Satd. Flow (perm)	870	1998		1207	1992		558	1718		814	1892	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	108%	108%	108%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	32	126	13	129	298	66	12	261	116	54	405	74
RTOR Reduction (vph)	0	7	0	0	16	0	0	39	0	0	16	0
Lane Group Flow (vph)	32	132	0	129	348	0	12	338	0	54	463	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	18.6	18.6		18.6	18.6		14.4	14.4		14.4	14.4	
Effective Green, g (s)	20.6	20.6		20.6	20.6		16.4	16.4		16.4	16.4	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.36	0.36		0.36	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	398	915		553	912		203	626		297	690	
v/s Ratio Prot		0.07			c0.17			0.20			c0.24	
v/s Ratio Perm	0.04			0.11			0.02			0.07		
v/c Ratio	0.08	0.14		0.23	0.38		0.06	0.54		0.18	0.67	
Uniform Delay, d1	6.9	7.1		7.4	8.0		9.3	11.3		9.7	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		1.0	1.2		0.1	0.9		0.3	2.6	
Delay (s)	7.0	7.2		8.4	9.2		9.4	12.2		10.0	14.6	
Level of Service	A	A		A	A		A	B		B	B	
Approach Delay (s)		7.1			9.0			12.1			14.1	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

PM 2012 Build
4/11/2006






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1693	1689		1610	1679		1823	1924		1770	1924	
Flt Permitted	0.45	1.00		0.61	1.00		0.33	1.00		0.62	1.00	
Satd. Flow (perm)	810	1689		1031	1679		642	1924		1159	1924	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	103%	103%	103%	101%	101%	101%	101%	101%	101%	103%	103%	103%
Adj. Flow (vph)	52	146	19	49	267	18	23	117	29	16	278	74
RTOR Reduction (vph)	0	4	0	0	3	0	0	9	0	0	10	0
Lane Group Flow (vph)	52	161	0	49	282	0	23	137	0	16	342	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	52.0	34.0		52.0	34.0		30.0	30.0		30.0	30.0	
Effective Green, g (s)	56.0	36.0		56.0	36.0		32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.56	0.36		0.56	0.36		0.32	0.32		0.32	0.32	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	630	608		693	604		205	616		371	616	
v/s Ratio Prot	c0.02	0.10		0.01	c0.17			0.07			c0.18	
v/s Ratio Perm	0.03			0.03			0.04			0.01		
v/c Ratio	0.08	0.26		0.07	0.47		0.11	0.22		0.04	0.56	
Uniform Delay, d1	10.3	22.6		10.0	24.6		24.0	24.9		23.4	28.1	
Progression Factor	1.00	1.00		0.77	0.78		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.1		0.2	2.5		1.1	0.8		0.2	3.6	
Delay (s)	10.6	23.7		7.9	21.6		25.1	25.7		23.7	31.7	
Level of Service	B	C		A	C		C	C		C	C	
Approach Delay (s)		20.5			19.6			25.6			31.4	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

PM 2012 Build
4/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			0.95		1.00	1.00	
Frt	1.00	0.96		1.00	0.98			0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	1782		1594	3113			3159		1717	1777	
Flt Permitted	0.45	1.00		0.54	1.00			0.74		0.43	1.00	
Satd. Flow (perm)	832	1782		907	3113			2369		780	1777	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	107%	107%	107%	104%	104%	104%	103%	103%	103%
Adj. Flow (vph)	24	166	68	177	363	67	78	297	119	31	439	55
RTOR Reduction (vph)	0	15	0	0	15	0	0	30	0	0	4	0
Lane Group Flow (vph)	24	219	0	177	415	0	0	464	0	31	490	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	39.0	39.0		39.0	39.0			49.0		49.0	49.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			51.0		51.0	51.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Lane Grp Cap (vph)	341	731		372	1276			1208		398	906	
v/s Ratio Prot		0.12			0.13						c0.28	
v/s Ratio Perm	0.03			c0.20				0.20		0.04		
v/c Ratio	0.07	0.30		0.48	0.32			0.38		0.08	0.54	
Uniform Delay, d1	17.9	19.8		21.6	20.1			14.9		12.5	16.6	
Progression Factor	0.50	0.51		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.4	1.0		4.3	0.7			0.9		0.4	2.3	
Delay (s)	9.4	11.1		25.9	20.8			15.9		12.9	18.9	
Level of Service	A	B		C	C			B		B	B	
Approach Delay (s)		10.9			22.3			15.9			18.5	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM Average Control Delay			18.0			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			71.6%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

AM 2030 No Build

1: Simpson Road & West lake

4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.97			0.97			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1992			1969			1739			1890	
Flt Permitted		0.91			0.77			0.99			0.87	
Satd. Flow (perm)		1818			1545			1724			1662	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	153%	153%	153%	127%	127%	127%	127%	127%	127%	127%	127%	127%
Adj. Flow (vph)	78	366	32	79	157	54	11	356	119	64	262	44
RTOR Reduction (vph)	0	4	0	0	12	0	0	17	0	0	7	0
Lane Group Flow (vph)	0	472	0	0	278	0	0	469	0	0	363	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		27.0			27.0			31.0			31.0	
Effective Green, g (s)		29.0			29.0			33.0			33.0	
Actuated g/C Ratio		0.41			0.41			0.47			0.47	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		753			640			813			784	
v/s Ratio Prot												
v/s Ratio Perm		c0.26			0.18			c0.27			0.22	
v/c Ratio		0.63			0.43			0.58			0.46	
Uniform Delay, d1		16.2			14.6			13.4			12.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.9			2.1			3.0			2.0	
Delay (s)		20.2			16.8			16.4			14.5	
Level of Service		C			B			B			B	
Approach Delay (s)		20.2			16.8			16.4			14.5	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM Average Control Delay		17.1			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		80.2%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

AM 2030 No Build
4/14/2006



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1693	1705		1610	1684			1941			1913	
Flt Permitted	0.67	1.00		0.45	1.00			0.97			0.98	
Satd. Flow (perm)	1197	1705		756	1684			1897			1887	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	126%	126%	126%	118%	118%	118%	118%	118%	118%	126%	126%	126%
Adj. Flow (vph)	74	277	15	32	113	5	18	176	28	7	92	34
RTOR Reduction (vph)	0	2	0	0	1	0	0	5	0	0	12	0
Lane Group Flow (vph)	74	290	0	32	117	0	0	217	0	0	121	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	52.0	34.0		52.0	34.0			30.0			30.0	
Effective Green, g (s)	56.0	36.0		56.0	36.0			32.0			32.0	
Actuated g/C Ratio	0.56	0.36		0.56	0.36			0.32			0.32	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	770	614		594	606			607			604	
v/s Ratio Prot	c0.02	c0.17		0.01	0.07							
v/s Ratio Perm	0.03			0.02				c0.11			0.06	
v/c Ratio	0.10	0.47		0.05	0.19			0.36			0.20	
Uniform Delay, d1	10.1	24.7		10.2	22.0			26.1			24.7	
Progression Factor	1.00	1.00		0.68	0.67			1.00			1.00	
Incremental Delay, d2	0.2	2.6		0.2	0.7			1.6			0.7	
Delay (s)	10.4	27.3		7.1	15.3			27.7			25.4	
Level of Service	B	C		A	B			C			C	
Approach Delay (s)		23.9			13.6			27.7			25.4	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

AM 2030 No Build
4/14/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.99			0.97			0.97			0.99	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1829			3064			3206			1780	
Flt Permitted		0.93			0.76			0.93			0.84	
Satd. Flow (perm)		1709			2340			2981			1499	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	131%	131%	131%	148%	148%	148%	131%	131%	131%	127%	127%	127%
Adj. Flow (vph)	43	318	37	74	201	64	41	800	188	33	248	21
RTOR Reduction (vph)	0	4	0	0	20	0	0	19	0	0	2	0
Lane Group Flow (vph)	0	394	0	0	319	0	0	1010	0	0	300	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		39.0			39.0			49.0			49.0	
Effective Green, g (s)		41.0			41.0			51.0			51.0	
Actuated g/C Ratio		0.41			0.41			0.51			0.51	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		701			959			1520			764	
v/s Ratio Prot												
v/s Ratio Perm		c0.23			0.14			c0.34			0.20	
v/c Ratio		0.56			0.33			0.66			0.39	
Uniform Delay, d1		22.6			20.2			18.2			15.0	
Progression Factor		0.53			1.00			1.00			1.00	
Incremental Delay, d2		3.1			0.9			2.3			1.5	
Delay (s)		15.2			21.1			20.5			16.5	
Level of Service		B			C			C			B	
Approach Delay (s)		15.2			21.1			20.5			16.5	
Approach LOS		B			C			C			B	
Intersection Summary												
HCM Average Control Delay		19.0			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		100.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		77.6%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

PM 2030 No Build

1: Simpson Road & West lake

4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.96			0.98	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1988			1985			1725			1892	
Flt Permitted		0.84			0.83			0.98			0.92	
Satd. Flow (perm)		1695			1671			1686			1748	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	153%	153%	153%	127%	127%	127%	127%	127%	127%	127%	127%	127%
Adj. Flow (vph)	45	178	18	159	367	81	15	322	144	66	500	91
RTOR Reduction (vph)	0	4	0	0	8	0	0	22	0	0	8	0
Lane Group Flow (vph)	0	237	0	0	599	0	0	459	0	0	649	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		27.0			27.0			31.0			31.0	
Effective Green, g (s)		29.0			29.0			33.0			33.0	
Actuated g/C Ratio		0.41			0.41			0.47			0.47	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		702			692			795			824	
v/s Ratio Prot												
v/s Ratio Perm		0.14			0.36			0.27			0.37	
v/c Ratio		0.34			0.87			0.58			0.79	
Uniform Delay, d1		14.0			18.7			13.4			15.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			13.6			3.0			7.5	
Delay (s)		15.3			32.4			16.5			23.0	
Level of Service		B			C			B			C	
Approach Delay (s)		15.3			32.4			16.5			23.0	
Approach LOS		B			C			B			C	
Intersection Summary												
HCM Average Control Delay		23.4			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		109.5%			ICU Level of Service			H				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

PM 2030 No Build
4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1693	1689		1610	1679			1925			1929	
Flt Permitted	0.40	1.00		0.56	1.00			0.88			0.98	
Satd. Flow (perm)	706	1689		950	1679			1696			1900	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	126%	126%	126%	118%	118%	118%	118%	118%	118%	126%	126%	126%
Adj. Flow (vph)	63	178	23	58	312	21	27	137	33	19	340	90
RTOR Reduction (vph)	0	4	0	0	3	0	0	7	0	0	9	0
Lane Group Flow (vph)	63	197	0	58	330	0	0	190	0	0	440	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	52.0	34.0		52.0	34.0			30.0			30.0	
Effective Green, g (s)	56.0	36.0		56.0	36.0			32.0			32.0	
Actuated g/C Ratio	0.56	0.36		0.56	0.36			0.32			0.32	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)	593	608		664	604			543			608	
v/s Ratio Prot	c0.02	0.12		0.02	c0.20							
v/s Ratio Perm	0.04			0.03				0.11			c0.23	
v/c Ratio	0.11	0.32		0.09	0.55			0.35			0.72	
Uniform Delay, d1	10.6	23.2		10.1	25.5			26.0			30.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.4	1.4		0.3	3.5			1.8			7.3	
Delay (s)	11.0	24.6		10.4	29.0			27.8			37.4	
Level of Service	B	C		B	C			C			D	
Approach Delay (s)		21.3			26.3			27.8			37.4	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: Simpson Road & Joseph E Lowery Blvd

PM 2030 No Build
4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			1.00	
Frt		0.96			0.98			0.96			0.99	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1788			3090			3159			1776	
Flt Permitted		0.88			0.75			0.74			0.94	
Satd. Flow (perm)		1584			2336			2369			1668	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	131%	131%	131%	148%	148%	148%	131%	131%	131%	127%	127%	127%
Adj. Flow (vph)	30	209	85	245	502	93	98	374	150	39	541	68
RTOR Reduction (vph)	0	28	0	0	22	0	0	68	0	0	9	0
Lane Group Flow (vph)	0	296	0	0	818	0	0	554	0	0	639	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		16.0			16.0			17.0			17.0	
Effective Green, g (s)		18.0			18.0			19.0			19.0	
Actuated g/C Ratio		0.40			0.40			0.42			0.42	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		634			934			1000			704	
v/s Ratio Prot												
v/s Ratio Perm		0.19			0.35			0.23			0.38	
v/c Ratio		0.47			0.88			0.55			0.91	
Uniform Delay, d1		10.0			12.5			9.8			12.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.5			11.3			0.7			15.4	
Delay (s)		12.4			23.8			10.5			27.5	
Level of Service		B			C			B			C	
Approach Delay (s)		12.4			23.8			10.5			27.5	
Approach LOS		B			C			B			C	

Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1699	2002		1717	1969		1770	1733		1840	1895	
Flt Permitted	0.63	1.00		0.45	1.00		0.51	1.00		0.30	1.00	
Satd. Flow (perm)	1119	2002		822	1969		944	1733		580	1895	
Volume (vph)	47	220	19	57	114	39	8	258	86	46	190	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	153%	153%	153%	127%	127%	127%	127%	127%	127%	127%	127%	127%
Adj. Flow (vph)	78	366	32	79	157	54	11	356	119	64	262	44
RTOR Reduction (vph)	0	6	0	0	26	0	0	29	0	0	14	0
Lane Group Flow (vph)	78	392	0	79	185	0	11	446	0	64	292	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	18.8	18.8		18.8	18.8		14.2	14.2		14.2	14.2	
Effective Green, g (s)	20.8	20.8		20.8	20.8		16.2	16.2		16.2	16.2	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.36	0.36		0.36	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	517	925		380	910		340	624		209	682	
v/s Ratio Prot		c0.20			0.09			c0.26			0.15	
v/s Ratio Perm	0.07			0.10			0.01			0.11		
v/c Ratio	0.15	0.42		0.21	0.20		0.03	0.72		0.31	0.43	
Uniform Delay, d1	7.0	8.1		7.2	7.2		9.3	12.4		10.4	10.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.4		1.2	0.5		0.0	3.9		0.8	0.4	
Delay (s)	7.6	9.5		8.4	7.7		9.4	16.3		11.2	11.3	
Level of Service	A	A		A	A		A	B		B	B	
Approach Delay (s)		9.2			7.9			16.1			11.3	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

AM 2030 Build
4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1693	1705		1610	1684		1823	1942		1770	1907	
Flt Permitted	0.68	1.00		0.56	1.00		0.68	1.00		0.54	1.00	
Satd. Flow (perm)	1214	1705		941	1684		1297	1942		1003	1907	
Volume (vph)	54	202	11	25	88	4	14	137	22	5	67	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	126%	126%	126%	118%	118%	118%	118%	118%	118%	126%	126%	126%
Adj. Flow (vph)	74	277	15	32	113	5	18	176	28	7	92	34
RTOR Reduction (vph)	0	2	0	0	2	0	0	12	0	0	27	0
Lane Group Flow (vph)	74	290	0	32	116	0	18	192	0	7	99	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	29.9	26.3		25.9	24.3		9.1	9.1		9.1	9.1	
Effective Green, g (s)	33.9	28.3		29.9	26.3		11.1	11.1		11.1	11.1	
Actuated g/C Ratio	0.62	0.51		0.54	0.48		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	797	877		555	805		262	392		202	385	
v/s Ratio Prot	c0.01	c0.17		0.00	0.07			c0.10			0.05	
v/s Ratio Perm	0.05			0.03			0.01			0.01		
v/c Ratio	0.09	0.33		0.06	0.14		0.07	0.49		0.03	0.26	
Uniform Delay, d1	4.3	7.8		6.5	8.0		17.8	19.4		17.6	18.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.0	0.4		0.1	1.0		0.1	0.4	
Delay (s)	4.4	8.8		6.5	8.4		17.9	20.4		17.7	18.8	
Level of Service	A	A		A	A		B	C		B	B	
Approach Delay (s)		7.9			8.0			20.2			18.8	
Approach LOS		A			A			C			B	

Intersection Summary

HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9: Simpson Road & Joseph E Lowery Blvd

AM 2030 Build
4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			0.95		1.00	1.00	
Frt	1.00	0.98		1.00	0.96			0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	1834		1594	3072			3206		1717	1786	
Flt Permitted	0.59	1.00		0.47	1.00			0.93		0.22	1.00	
Satd. Flow (perm)	1096	1834		796	3072			2996		391	1786	
Volume (vph)	30	223	26	46	125	40	29	562	132	24	180	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	131%	131%	131%	148%	148%	148%	131%	131%	131%	127%	127%	127%
Adj. Flow (vph)	43	318	37	74	201	64	41	800	188	33	248	21
RTOR Reduction (vph)	0	9	0	0	38	0	0	44	0	0	7	0
Lane Group Flow (vph)	43	346	0	74	227	0	0	985	0	33	262	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	16.5	16.5		16.5	16.5			16.5		16.5	16.5	
Effective Green, g (s)	18.5	18.5		18.5	18.5			18.5		18.5	18.5	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.41		0.41	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	451	754		327	1263			1232		161	734	
v/s Ratio Prot		c0.19			0.07						0.15	
v/s Ratio Perm	0.04			0.09				c0.33		0.08		
v/c Ratio	0.10	0.46		0.23	0.18			0.80		0.20	0.36	
Uniform Delay, d1	8.1	9.6		8.6	8.4			11.6		8.5	9.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.4	2.0		1.6	0.3			3.7		0.6	0.3	
Delay (s)	8.5	11.6		10.2	8.7			15.4		9.2	9.4	
Level of Service	A	B		B	A			B		A	A	
Approach Delay (s)		11.3			9.1			15.4			9.4	
Approach LOS		B			A			B			A	

Intersection Summary

HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	11	12	12	12	12
Grade (%)		8%			6%			0%			-8%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1699	1999		1717	1992		1770	1717		1840	1893	
Flt Permitted	0.39	1.00		0.63	1.00		0.23	1.00		0.34	1.00	
Satd. Flow (perm)	690	1999		1146	1992		421	1717		660	1893	
Volume (vph)	27	107	11	115	266	59	11	233	104	48	362	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	153%	153%	153%	127%	127%	127%	127%	127%	127%	127%	127%	127%
Adj. Flow (vph)	45	178	18	159	367	81	15	322	144	66	500	91
RTOR Reduction (vph)	0	7	0	0	17	0	0	38	0	0	15	0
Lane Group Flow (vph)	45	189	0	159	431	0	15	428	0	66	576	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	17.3	17.3		17.3	17.3		15.7	15.7		15.7	15.7	
Effective Green, g (s)	19.3	19.3		19.3	19.3		17.7	17.7		17.7	17.7	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.39	0.39		0.39	0.39	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	296	857		492	854		166	675		260	745	
v/s Ratio Prot		0.09			c0.22			0.25			c0.30	
v/s Ratio Perm	0.07			0.14			0.04			0.10		
v/c Ratio	0.15	0.22		0.32	0.51		0.09	0.63		0.25	0.77	
Uniform Delay, d1	7.9	8.1		8.5	9.4		8.6	11.0		9.2	11.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		1.7	2.1		0.2	2.0		0.5	5.0	
Delay (s)	8.1	8.2		10.3	11.5		8.8	13.0		9.7	16.9	
Level of Service	A	A		B	B		A	B		A	B	
Approach Delay (s)		8.2			11.2			12.9			16.2	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

2: Simpson Road & Chappell Road

PM 2030 Build
4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	9	12	10	10	12	12	13	12	12	14	12
Grade (%)		-5%			5%			-6%			0%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1693	1689		1610	1679		1823	1925		1770	1925	
Flt Permitted	0.47	1.00		0.63	1.00		0.26	1.00		0.65	1.00	
Satd. Flow (perm)	843	1689		1065	1679		496	1925		1208	1925	
Volume (vph)	46	130	17	45	243	16	21	107	26	14	248	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	126%	126%	126%	118%	118%	118%	118%	118%	118%	126%	126%	126%
Adj. Flow (vph)	63	178	23	58	312	21	27	137	33	19	340	90
RTOR Reduction (vph)	0	8	0	0	4	0	0	16	0	0	18	0
Lane Group Flow (vph)	63	193	0	58	329	0	27	154	0	19	412	0
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	22.6	20.2		22.6	20.2		14.4	14.4		14.4	14.4	
Effective Green, g (s)	26.6	22.2		26.6	22.2		16.4	16.4		16.4	16.4	
Actuated g/C Ratio	0.48	0.40		0.48	0.40		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	476	682		559	678		148	574		360	574	
v/s Ratio Prot	c0.01	0.11		0.01	c0.20			0.08			c0.21	
v/s Ratio Perm	0.05			0.04			0.05			0.02		
v/c Ratio	0.13	0.28		0.10	0.48		0.18	0.27		0.05	0.72	
Uniform Delay, d1	9.8	11.0		7.8	12.2		14.3	14.7		13.8	17.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.1	2.5		0.6	0.3		0.1	4.3	
Delay (s)	10.0	12.1		7.9	14.6		14.9	15.0		13.8	21.5	
Level of Service	A	B		A	B		B	B		B	C	
Approach Delay (s)		11.6			13.6			15.0			21.2	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9: Simpson Road & Joseph E Lowery Blvd

PM 2030 Build
4/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	10	12	12	12	12
Grade (%)		0%			7%			0%			6%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			0.95		1.00	1.00	
Frt	1.00	0.96		1.00	0.98			0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	1782		1594	3113			3159		1717	1777	
Flt Permitted	0.40	1.00		0.55	1.00			0.63		0.37	1.00	
Satd. Flow (perm)	739	1782		923	3113			1991		662	1777	
Volume (vph)	21	147	60	152	312	58	69	263	105	28	392	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	131%	131%	131%	148%	148%	148%	131%	131%	131%	127%	127%	127%
Adj. Flow (vph)	30	209	85	245	502	93	98	374	150	39	541	68
RTOR Reduction (vph)	0	32	0	0	34	0	0	69	0	0	10	0
Lane Group Flow (vph)	30	262	0	245	561	0	0	553	0	39	599	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	17.4	17.4		17.4	17.4			15.6		15.6	15.6	
Effective Green, g (s)	19.4	19.4		19.4	19.4			17.6		17.6	17.6	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.39		0.39	0.39	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	319	768		398	1342			779		259	695	
v/s Ratio Prot		0.15			0.18						c0.34	
v/s Ratio Perm	0.04			c0.27				0.28		0.06		
v/c Ratio	0.09	0.34		0.62	0.42			0.71		0.15	0.86	
Uniform Delay, d1	7.6	8.5		9.9	8.9			11.5		8.9	12.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.2		7.0	1.0			3.1		0.3	10.7	
Delay (s)	8.2	9.7		16.9	9.8			14.6		9.1	23.2	
Level of Service	A	A		B	A			B		A	C	
Approach Delay (s)		9.6			11.9			14.6			22.4	
Approach LOS		A			B			B			C	

Intersection Summary

HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Appendix F
Traffic Volume Summary
(See Attached Sheets)

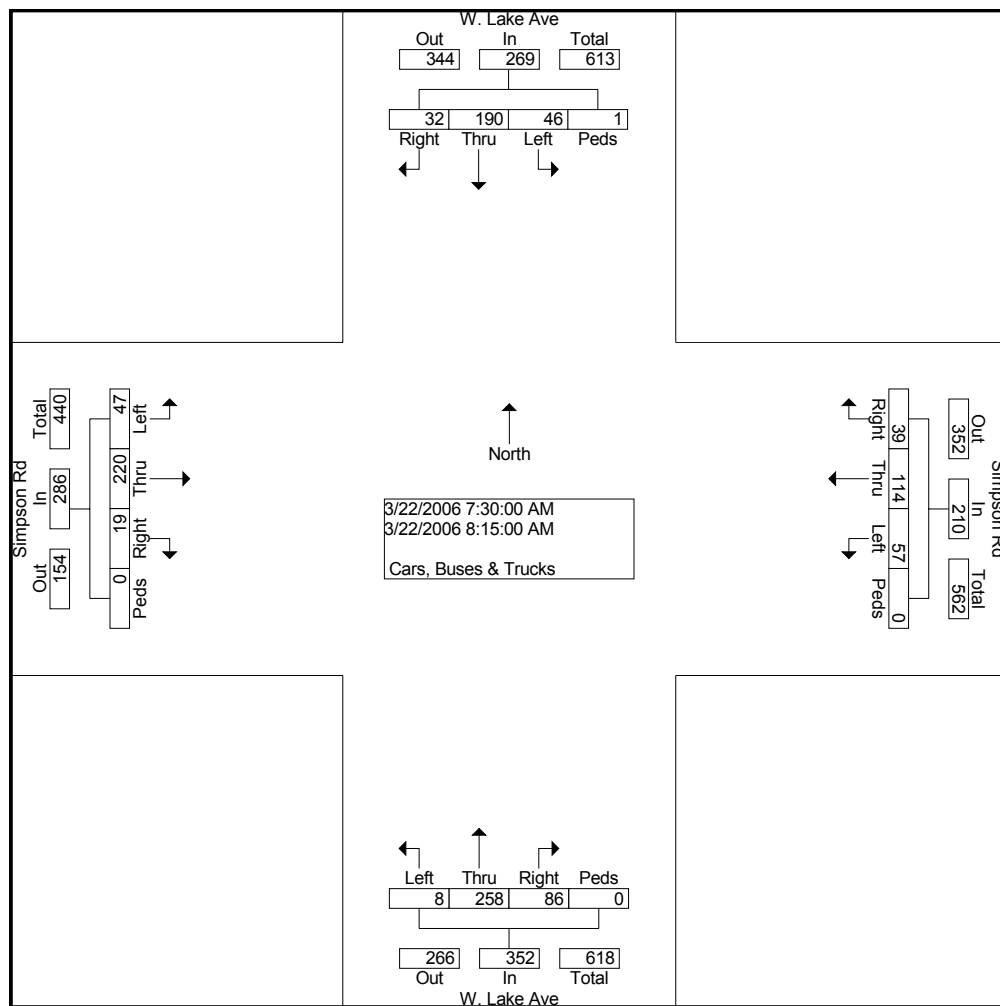
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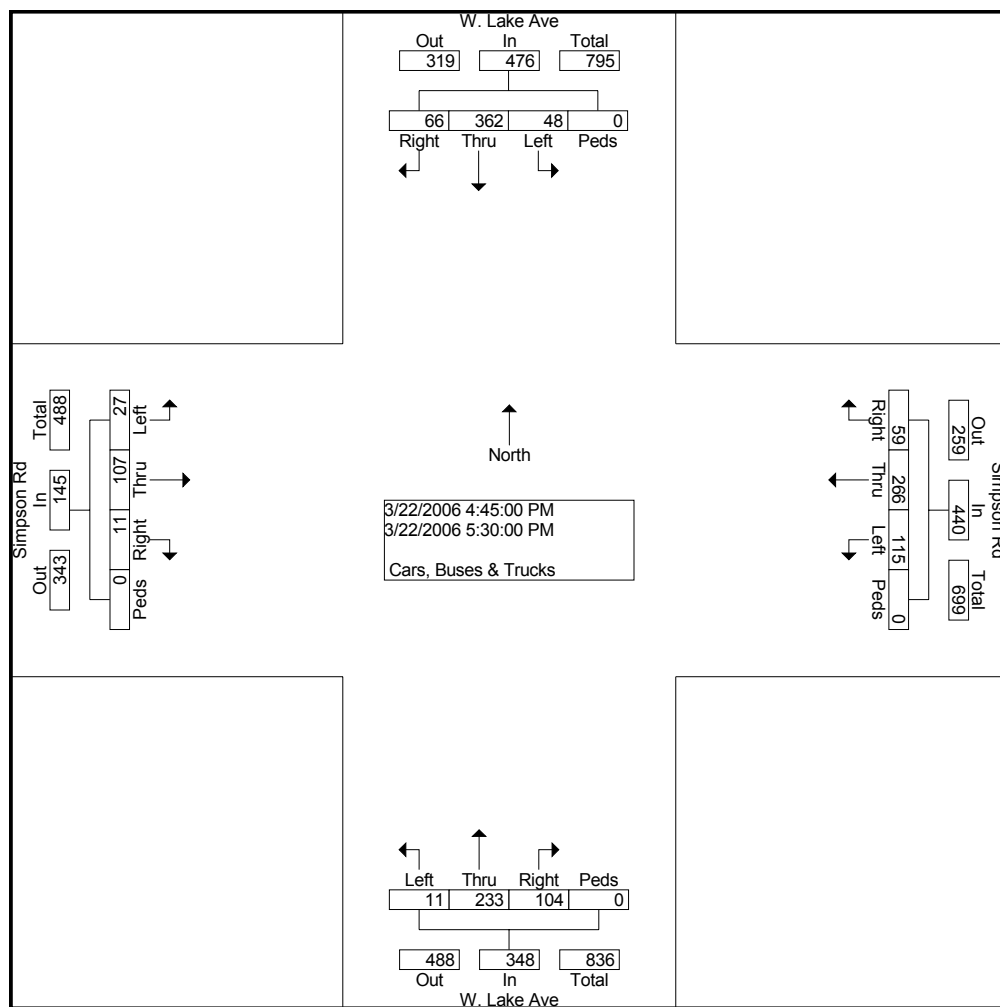
Groups Printed- Cars, Buses & Trucks

	W. Lake Ave North Bound					W. Lake Ave South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	2	54	19	0	75	9	31	7	0	47	11	31	2	0	44	10	16	5	0	31	197
07:15 AM	1	55	23	0	79	12	34	11	0	57	16	34	4	0	54	14	18	7	0	39	229
07:30 AM	2	53	24	0	79	12	51	9	0	72	13	56	5	0	74	17	26	5	0	48	273
07:45 AM	0	68	21	0	89	12	50	10	0	72	14	58	4	0	76	12	33	9	0	54	291
Total	5	230	87	0	322	45	166	37	0	248	54	179	15	0	248	53	93	26	0	172	990
08:00 AM	3	76	21	0	100	12	43	6	0	61	11	57	8	0	76	14	27	10	0	51	288
08:15 AM	3	61	20	0	84	10	46	7	1	64	9	49	2	0	60	14	28	15	0	57	265
08:30 AM	3	52	19	0	74	8	36	4	0	48	7	50	3	0	60	11	17	10	0	38	220
08:45 AM	1	57	22	0	80	18	43	5	0	66	6	28	5	0	39	9	13	7	0	29	214
Total	10	246	82	0	338	48	168	22	1	239	33	184	18	0	235	48	85	42	0	175	987
*** BREAK ***																					
04:00 PM	2	68	28	0	98	5	98	17	0	120	10	31	6	0	47	36	49	11	0	96	361
04:15 PM	2	55	21	0	78	11	92	13	0	116	4	38	4	0	46	23	45	12	0	80	320
04:30 PM	2	52	21	0	75	18	69	17	0	104	7	23	2	0	32	39	55	13	0	107	318
04:45 PM	1	62	22	0	85	11	77	18	0	106	8	30	3	0	41	31	57	12	0	100	332
Total	7	237	92	0	336	45	336	65	0	446	29	122	15	0	166	129	206	48	0	383	1331
05:00 PM	3	52	23	0	78	12	84	15	0	111	5	27	2	0	34	25	75	17	0	117	340
05:15 PM	4	58	32	0	94	11	97	14	0	122	6	26	2	0	34	30	69	12	0	111	361
05:30 PM	3	61	27	0	91	14	104	19	0	137	8	24	4	0	36	29	65	18	0	112	376
05:45 PM	4	47	24	0	75	11	91	15	0	117	12	22	4	0	38	31	48	9	0	88	318
Total	14	218	106	0	338	48	376	63	0	487	31	99	12	0	142	115	257	56	0	428	1395
Grand Total	36	931	367	0	1334	186	1046	187	1	1420	147	584	60	0	791	345	641	172	0	1158	4703
Apprch %	2.7	69.8	27.5	0.0		13.1	73.7	13.2	0.1		18.6	73.8	7.6	0.0		29.8	55.4	14.9	0.0		
Total %	0.8	19.8	7.8	0.0	28.4	4.0	22.2	4.0	0.0	30.2	3.1	12.4	1.3	0.0	16.8	7.3	13.6	3.7	0.0	24.6	

	W. Lake Ave North Bound					W. Lake Ave South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Intersection 07:30 AM																					
Volume	8	258	86	0	352	46	190	32	1	269	47	220	19	0	286	57	114	39	0	210	1117
Percent	2.3	73.3	24.4	0.0		17.1	70.6	11.9	0.4		16.4	76.9	6.6	0.0		27.1	54.3	18.6	0.0		
07:45																					
Volume	0	68	21	0	89	12	50	10	0	72	14	58	4	0	76	12	33	9	0	54	291
Peak Factor																					0.960
High Int. 08:00 AM																					
Volume	3	76	21	0	100	12	51	9	0	72	14	58	4	0	76	14	28	15	0	57	
Peak Factor	0.880					0.934					0.941					0.921					



	W. Lake Ave North Bound					W. Lake Ave South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From Intersection	12:00 PM to 05:45 PM - Peak 1 of 1																				
Volume	11	233	104	0	348	48	362	66	0	476	27	107	11	0	145	115	266	59	0	440	1409
Percent	3.2	67.0	29.9	0.0		10.1	76.1	13.9	0.0		18.6	73.8	7.6	0.0		26.1	60.5	13.4	0.0		
05:30 Volume	3	61	27	0	91	14	104	19	0	137	8	24	4	0	36	29	65	18	0	112	376
Peak Factor																					0.937
High Int.	05:15 PM					05:30 PM					04:45 PM					05:00 PM					
Volume	4	58	32	0	94	14	104	19	0	137	8	30	3	0	41	25	75	17	0	117	
Peak Factor	0.926					0.869					0.884					0.940					



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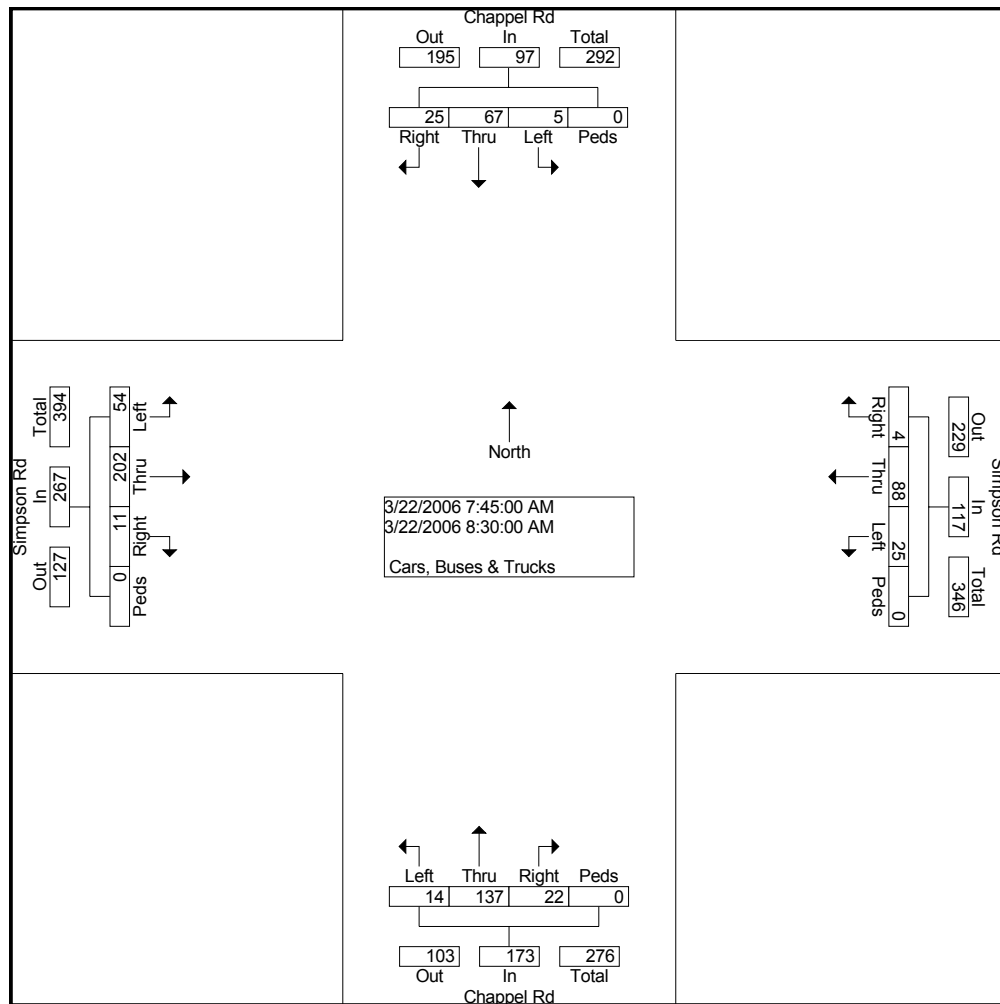
Groups Printed- Cars, Buses & Trucks

	Chappel Rd North Bound					Chappel Rd South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	1	32	1	0	34	1	15	6	0	22	14	20	0	0	34	5	11	0	0	16	106
07:15 AM	2	40	7	0	49	3	14	5	0	22	12	30	2	0	44	7	17	2	0	26	141
07:30 AM	1	28	5	0	34	0	16	2	0	18	11	41	1	0	53	2	19	2	0	23	128
07:45 AM	3	50	5	0	58	0	15	5	0	20	15	49	5	0	69	5	22	2	0	29	176
Total	7	150	18	0	175	4	60	18	0	82	52	140	8	0	200	19	69	6	0	94	551
08:00 AM	5	30	11	0	46	1	14	9	0	24	15	57	3	0	75	9	30	0	0	39	184
08:15 AM	4	22	2	0	28	3	21	7	0	31	16	44	3	0	63	8	26	1	0	35	157
08:30 AM	2	35	4	0	41	1	17	4	0	22	8	52	0	0	60	3	10	1	0	14	137
08:45 AM	6	22	5	0	33	1	13	4	0	18	12	38	4	0	54	7	12	2	0	21	126
Total	17	109	22	0	148	6	65	24	0	95	51	191	10	0	252	27	78	4	0	109	604
*** BREAK ***																					
04:00 PM	2	33	11	0	46	7	65	11	0	83	9	31	3	0	43	15	47	3	0	65	237
04:15 PM	4	23	7	0	34	8	53	14	0	75	13	35	6	0	54	13	44	3	0	60	223
04:30 PM	4	30	7	0	41	7	77	20	0	104	8	35	7	0	50	12	44	4	0	60	255
04:45 PM	4	20	6	0	30	2	53	14	0	69	15	29	4	0	48	6	59	2	0	67	214
Total	14	106	31	0	151	24	248	59	0	331	45	130	20	0	195	46	194	12	0	252	929
05:00 PM	8	30	6	0	44	3	60	20	0	83	12	33	5	0	50	15	62	4	0	81	258
05:15 PM	5	27	7	0	39	2	58	12	0	72	11	33	1	0	45	12	78	6	0	96	252
05:30 PM	6	14	5	0	25	7	46	15	0	68	11	43	1	0	55	18	53	3	0	74	222
05:45 PM	5	24	7	0	36	0	44	8	0	52	11	32	4	0	47	21	61	6	0	88	223
Total	24	95	25	0	144	12	208	55	0	275	45	141	11	0	197	66	254	19	0	339	955
Grand Total	62	460	96	0	618	46	581	156	0	783	193	602	49	0	844	158	595	41	0	794	3039
Apprch %	10.0	74.4	15.5	0.0		5.9	74.2	19.9	0.0		22.9	71.3	5.8	0.0		19.9	74.9	5.2	0.0		
Total %	2.0	15.1	3.2	0.0	20.3	1.5	19.1	5.1	0.0	25.8	6.4	19.8	1.6	0.0	27.8	5.2	19.6	1.3	0.0	26.1	

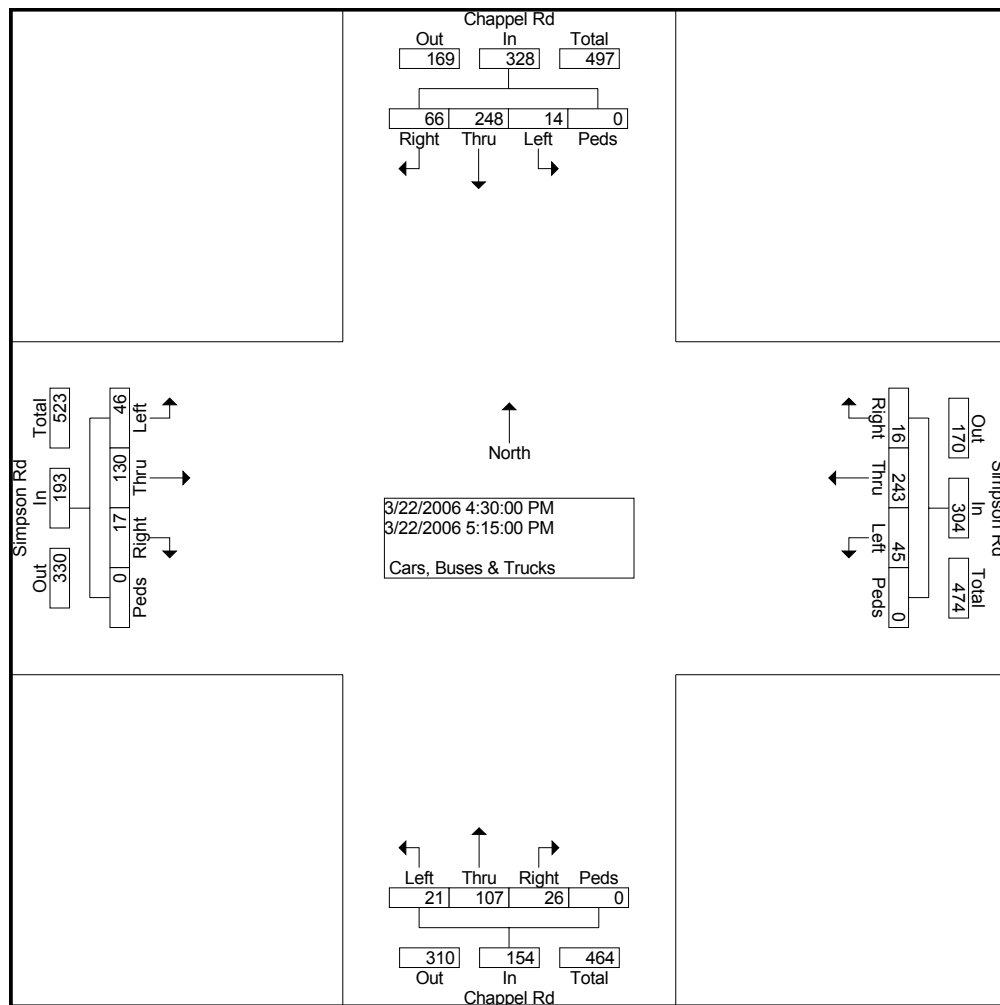
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	Chappel Rd North Bound					Chappel Rd South Bound					Simpson Rd East Bound					Simpson Rd West Bound					Int. Total
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Intersection 07:45 AM																					
Volume	14	137	22	0	173	5	67	25	0	97	54	202	11	0	267	25	88	4	0	117	654
Percent	8.1	79.2	12.7	0.0		5.2	69.1	25.8	0.0		20.2	75.7	4.1	0.0		21.4	75.2	3.4	0.0		
08:00	5	30	11	0	46	1	14	9	0	24	15	57	3	0	75	9	30	0	0	39	184
Volume																					
Peak Factor																					0.889
High Int. 07:45 AM																					
Volume	3	50	5	0	58	3	21	7	0	31	15	57	3	0	75	9	30	0	0	39	
Peak Factor																					0.750
	0.746					0.782					0.890										



	Chappel Rd North Bound					Chappel Rd South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From Intersection	12:00 PM to 05:45 PM - Peak 1 of 1																				
04:30 PM																					
Volume	21	107	26	0	154	14	248	66	0	328	46	130	17	0	193	45	243	16	0	304	979
Percent	13.6	69.5	16.9	0.0		4.3	75.6	20.1	0.0		23.8	67.4	8.8	0.0		14.8	79.9	5.3	0.0		
05:00																					
Volume	8	30	6	0	44	3	60	20	0	83	12	33	5	0	50	15	62	4	0	81	258
Peak Factor																					0.949
High Int.	05:00 PM					04:30 PM					04:30 PM					05:15 PM					
Volume	8	30	6	0	44	7	77	20	0	104	8	35	7	0	50	12	78	6	0	96	
Peak Factor					0.875					0.788					0.965					0.792	



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File Name : 24060004AP
Site Code : 24060004
Start Date : 3/22/2006
Page No : 1

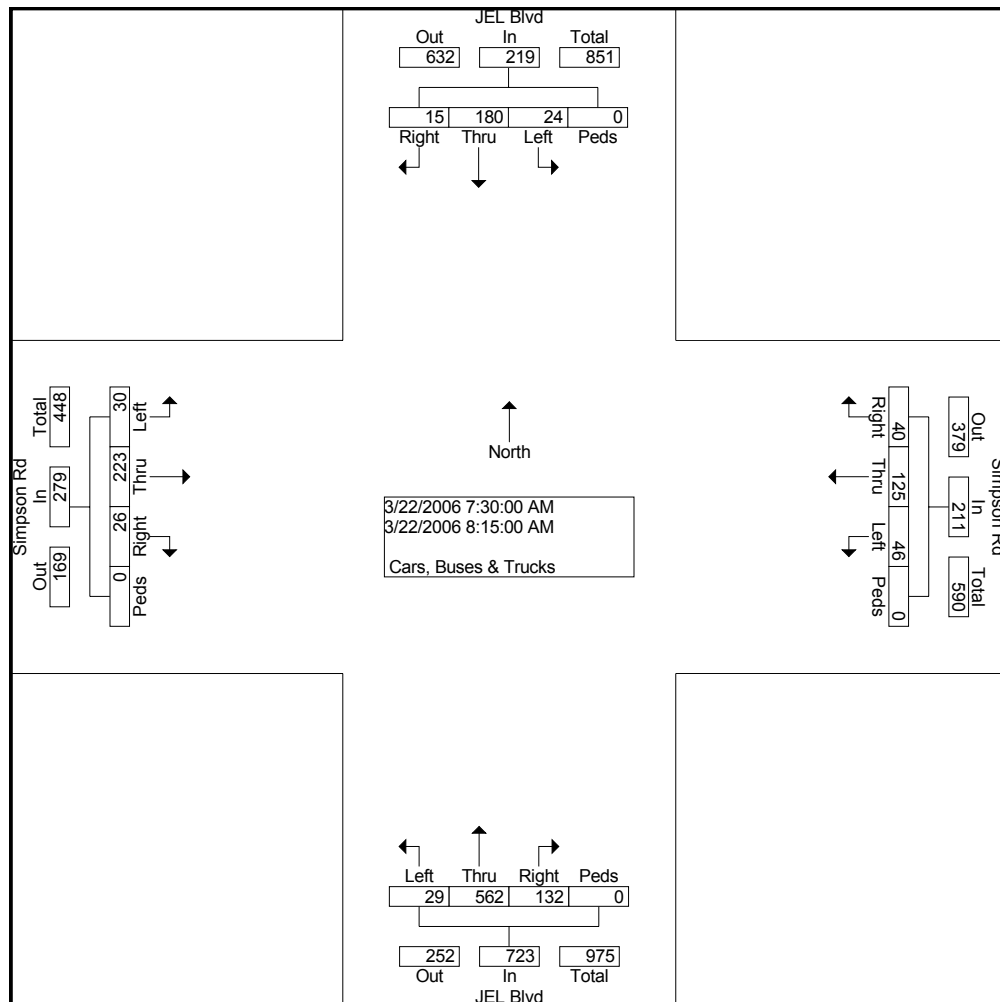
Groups Printed- Cars, Buses & Trucks

	JEL Blvd North Bound					JEL Blvd South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	2	118	14	0	134	3	32	4	0	39	4	35	3	0	42	6	24	6	0	36	251
07:15 AM	2	102	17	0	121	4	50	4	0	58	5	49	5	0	59	7	39	7	0	53	291
07:30 AM	10	132	33	0	175	8	47	3	0	58	6	58	7	0	71	9	35	10	0	54	358
07:45 AM	7	164	25	0	196	6	41	4	0	51	4	51	6	0	61	9	32	8	0	49	357
Total	21	516	89	0	626	21	170	15	0	206	19	193	21	0	233	31	130	31	0	192	1257
08:00 AM	6	143	34	0	183	5	46	6	0	57	13	64	5	0	82	14	35	10	0	59	381
08:15 AM	6	123	40	0	169	5	46	2	0	53	7	50	8	0	65	14	23	12	0	49	336
08:30 AM	4	128	26	0	158	7	48	6	0	61	8	53	7	0	68	16	16	10	0	42	329
08:45 AM	4	117	28	0	149	6	43	7	0	56	4	49	4	0	57	12	15	16	0	43	305
Total	20	511	128	0	659	23	183	21	0	227	32	216	24	0	272	56	89	48	0	193	1351
*** BREAK ***																					
04:00 PM	11	65	16	0	92	6	81	12	0	99	5	43	10	0	58	29	52	12	0	93	342
04:15 PM	12	64	13	0	89	12	94	17	0	123	9	39	11	0	59	24	65	10	0	99	370
04:30 PM	10	56	17	0	83	7	104	8	0	119	8	39	11	0	58	32	64	13	0	109	369
04:45 PM	9	50	20	0	79	7	95	5	0	107	6	38	10	0	54	36	66	20	0	122	362
Total	42	235	66	0	343	32	374	42	0	448	28	159	42	0	229	121	247	55	0	423	1443
05:00 PM	18	55	24	0	97	6	98	17	0	121	6	35	13	0	54	34	78	14	0	126	398
05:15 PM	17	63	31	0	111	10	95	11	0	116	6	33	14	0	53	47	87	15	0	149	429
05:30 PM	17	80	22	0	119	7	99	5	0	111	4	39	11	0	54	41	84	15	0	140	424
05:45 PM	17	65	28	0	110	5	100	16	0	121	5	40	22	0	67	30	63	14	0	107	405
Total	69	263	105	0	437	28	392	49	0	469	21	147	60	0	228	152	312	58	0	522	1656
Grand Total	152	1525	388	0	2065	104	1119	127	0	1350	100	715	147	0	962	360	778	192	0	1330	5707
Apprch %	7.4	73.8	18.8	0.0		7.7	82.9	9.4	0.0		10.4	74.3	15.3	0.0		27.1	58.5	14.4	0.0		
Total %	2.7	26.7	6.8	0.0	36.2	1.8	19.6	2.2	0.0	23.7	1.8	12.5	2.6	0.0	16.9	6.3	13.6	3.4	0.0	23.3	

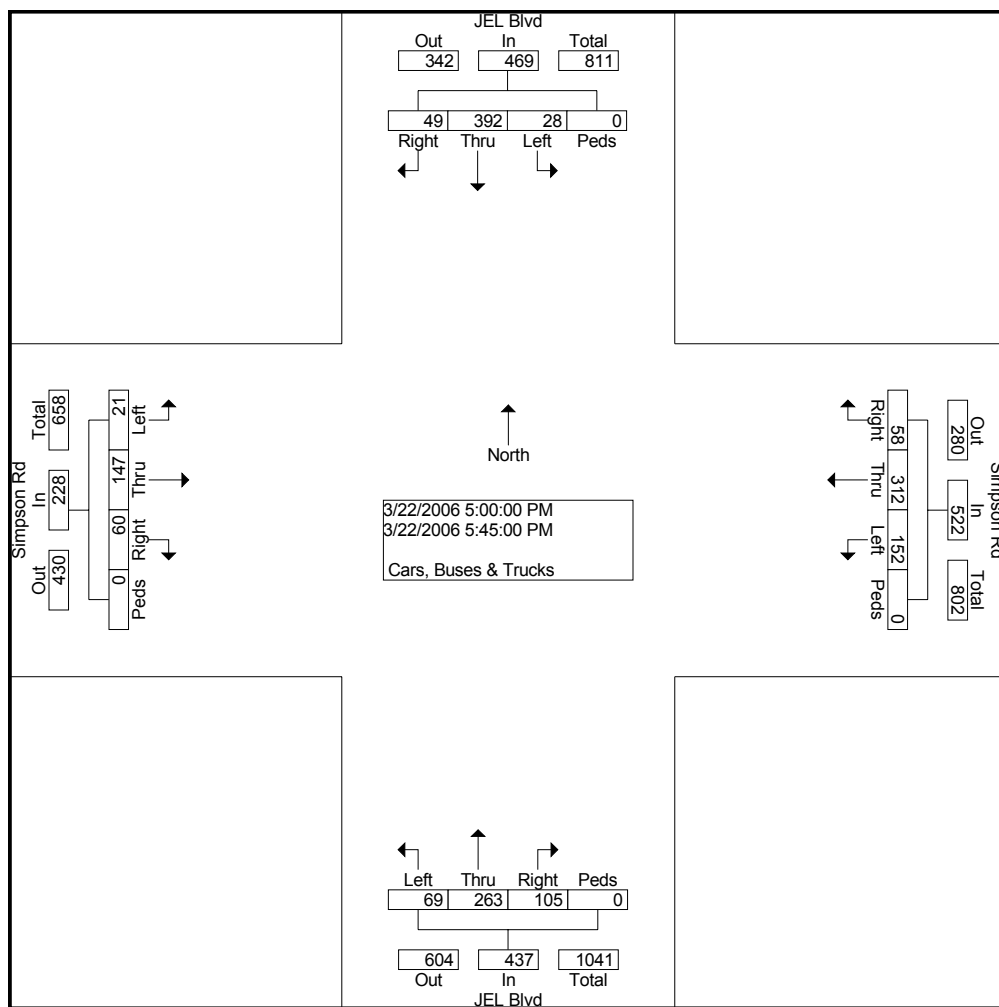
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File Name : 24060004AP
Site Code : 24060004
Start Date : 3/22/2006
Page No : 2

	JEL Blvd North Bound					JEL Blvd South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Intersection 07:30 AM																					
Volume	29	562	132	0	723	24	180	15	0	219	30	223	26	0	279	46	125	40	0	211	1432
Percent	4.0	77.7	18.3	0.0		11.0	82.2	6.8	0.0		10.8	79.9	9.3	0.0		21.8	59.2	19.0	0.0		
08:00	6	143	34	0	183	5	46	6	0	57	13	64	5	0	82	14	35	10	0	59	381
Volume																					
Peak Factor																					0.940
High Int. 07:45 AM																					
Volume	7	164	25	0	196	8	47	3	0	58	13	64	5	0	82	14	35	10	0	59	
Peak Factor	0.922					0.944					0.851					0.894					



	JEL Blvd North Bound					JEL Blvd South Bound					Simpson Rd East Bound					Simpson Rd West Bound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From Intersection	12:00 PM to 05:45 PM - Peak 1 of 1																				
05:00 PM																					
Volume	69	263	105	0	437	28	392	49	0	469	21	147	60	0	228	152	312	58	0	522	1656
Percent	15.8	60.2	24.0	0.0		6.0	83.6	10.4	0.0		9.2	64.5	26.3	0.0		29.1	59.8	11.1	0.0		
05:15																					
Volume	17	63	31	0	111	10	95	11	0	116	6	33	14	0	53	47	87	15	0	149	429
Peak Factor																					0.965
High Int.	05:30 PM					05:00 PM					05:45 PM					05:15 PM					
Volume	17	80	22	0	119	6	98	17	0	121	5	40	22	0	67	47	87	15	0	149	
Peak Factor					0.918					0.969					0.851						0.876



Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	33			0	0				
12:15		5	40			0	0				
12:30		2	27			0	0				
12:45		3	20	20	120	0	0	0	0	20	120
01:00		6	30			0	0				
01:15		4	34			0	0				
01:30		4	41			0	0				
01:45		2	24	16	129	0	0	0	0	16	129
02:00		4	33			0	0				
02:15		6	32			0	0				
02:30		1	40			0	0				
02:45		3	40	14	145	0	0	0	0	14	145
03:00		0	40			0	0				
03:15		6	25			0	0				
03:30		0	41			0	0				
03:45		1	34	7	140	0	0	0	0	7	140
04:00		1	43			0	0				
04:15		3	35			0	0				
04:30		2	42			0	0				
04:45		6	32	12	152	0	0	0	0	12	152
05:00		8	49			0	0				
05:15		9	32			0	0				
05:30		18	29			0	0				
05:45		16	37	51	147	0	0	0	0	51	147
06:00		20	16			0	0				
06:15		23	23			0	0				
06:30		36	32			0	0				
06:45		42	31	121	102	0	0	0	0	121	102
07:00		40	30			0	0				
07:15		51	31			0	0				
07:30		43	29			0	0				
07:45		51	27	185	117	0	0	0	0	185	117
08:00		59	25			0	0				
08:15		58	21			0	0				
08:30		57	21			0	0				
08:45		60	14	234	81	0	0	0	0	234	81
09:00		45	14			0	0				
09:15		49	17			0	0				
09:30		24	8			0	0				
09:45		38	11	156	50	0	0	0	0	156	50
10:00		51	18			0	0				
10:15		14	17			0	0				
10:30		31	13			0	0				
10:45		35	15	131	63	0	0	0	0	131	63
11:00		22	12			0	0				
11:15		33	10			0	0				
11:30		31	7			0	0				
11:45		23	6	109	35	0	0	0	0	109	35
Total		1056	1281			0	0			1056	1281
Percent		45.2%	54.8%			0.0%	0.0%			45.2%	54.8%
Grand Total		1056	1281			0	0			1056	1281
Percent		45.2%	54.8%			0.0%	0.0%			45.2%	54.8%

ADT Not Calculated

Site Code: 000002406101
Station ID:
Chappel Rd, SB
North Of Simpson Rd. Atl. GA
Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	31			0	0				
12:15		5	22			0	0				
12:30		5	26			0	0				
12:45		1	19	16	98	0	0	0	0	16	98
01:00		2	27			0	0				
01:15		2	19			0	0				
01:30		1	31			0	0				
01:45		1	26	6	103	0	0	0	0	6	103
02:00		3	25			0	0				
02:15		1	35			0	0				
02:30		2	41			0	0				
02:45		0	38	6	139	0	0	0	0	6	139
03:00		2	46			0	0				
03:15		4	42			0	0				
03:30		0	56			0	0				
03:45		0	61	6	205	0	0	0	0	6	205
04:00		0	79			0	0				
04:15		1	75			0	0				
04:30		2	98			0	0				
04:45		1	75	4	327	0	0	0	0	4	327
05:00		2	83			0	0				
05:15		2	76			0	0				
05:30		5	71			0	0				
05:45		4	55	13	285	0	0	0	0	13	285
06:00		8	47			0	0				
06:15		14	52			0	0				
06:30		18	45			0	0				
06:45		17	42	57	186	0	0	0	0	57	186
07:00		23	46			0	0				
07:15		22	31			0	0				
07:30		19	25			0	0				
07:45		22	32	86	134	0	0	0	0	86	134
08:00		25	21			0	0				
08:15		29	27			0	0				
08:30		25	25			0	0				
08:45		18	21	97	94	0	0	0	0	97	94
09:00		15	19			0	0				
09:15		17	20			0	0				
09:30		22	14			0	0				
09:45		18	18	72	71	0	0	0	0	72	71
10:00		19	21			0	0				
10:15		24	15			0	0				
10:30		26	14			0	0				
10:45		22	17	91	67	0	0	0	0	91	67
11:00		23	15			0	0				
11:15		19	18			0	0				
11:30		26	12			0	0				
11:45		27	9	95	54	0	0	0	0	95	54
Total		549	1763			0	0			549	1763
Percent		23.7%	76.3%			0.0%	0.0%			23.7%	76.3%
Grand Total		549	1763			0	0			549	1763
Percent		23.7%	76.3%			0.0%	0.0%			23.7%	76.3%

ADT Not Calculated

Site Code: 000024060092
Station ID:
W. Lake Ave. NB
North Of Simpson Rd, Atl GA
Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		16	58			0	0				
12:15		14	63			0	0				
12:30		6	55			0	0				
12:45		16	63	52	239	0	0	0	0	52	239
01:00		7	66			0	0				
01:15		5	61			0	0				
01:30		7	64			0	0				
01:45		7	69	26	260	0	0	0	0	26	260
02:00		7	72			0	0				
02:15		4	70			0	0				
02:30		8	62			0	0				
02:45		6	64	25	268	0	0	0	0	25	268
03:00		9	57			0	0				
03:15		3	59			0	0				
03:30		7	73			0	0				
03:45		5	85	24	274	0	0	0	0	24	274
04:00		8	88			0	0				
04:15		3	71			0	0				
04:30		8	83			0	0				
04:45		17	74	36	316	0	0	0	0	36	316
05:00		8	75			0	0				
05:15		9	77			0	0				
05:30		16	89			0	0				
05:45		18	70	51	311	0	0	0	0	51	311
06:00		19	86			0	0				
06:15		31	63			0	0				
06:30		50	58			0	0				
06:45		57	55	157	262	0	0	0	0	157	262
07:00		69	59			0	0				
07:15		78	70			0	0				
07:30		73	56			0	0				
07:45		92	53	312	238	0	0	0	0	312	238
08:00		98	51			0	0				
08:15		88	62			0	0				
08:30		70	43			0	0				
08:45		72	37	328	193	0	0	0	0	328	193
09:00		66	38			0	0				
09:15		58	42			0	0				
09:30		53	29			0	0				
09:45		52	30	229	139	0	0	0	0	229	139
10:00		50	28			0	0				
10:15		55	28			0	0				
10:30		59	40			0	0				
10:45		54	26	218	122	0	0	0	0	218	122
11:00		61	35			0	0				
11:15		57	23			0	0				
11:30		62	26			0	0				
11:45		67	15	247	99	0	0	0	0	247	99
Total		1705	2721			0	0			1705	2721
Percent		38.5%	61.5%			0.0%	0.0%			38.5%	61.5%
Grand Total		1705	2721			0	0			1705	2721
Percent		38.5%	61.5%			0.0%	0.0%			38.5%	61.5%

ADT Not Calculated

Site Code: 000024060091

Station ID:

W.Lake Ave Sb

North Of Simpson Rd

Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		16	52			0	0				
12:15		3	53			0	0				
12:30		6	68			0	0				
12:45		10	61	35	234	0	0	0	0	35	234
01:00		12	50			0	0				
01:15		5	61			0	0				
01:30		6	69			0	0				
01:45		5	67	28	247	0	0	0	0	28	247
02:00		3	65			0	0				
02:15		6	69			0	0				
02:30		3	88			0	0				
02:45		3	74	15	296	0	0	0	0	15	296
03:00		6	85			0	0				
03:15		5	83			0	0				
03:30		4	82			0	0				
03:45		4	90	19	340	0	0	0	0	19	340
04:00		4	118			0	0				
04:15		6	121			0	0				
04:30		5	105			0	0				
04:45		15	108	30	452	0	0	0	0	30	452
05:00		7	113			0	0				
05:15		12	121			0	0				
05:30		18	139			0	0				
05:45		25	116	62	489	0	0	0	0	62	489
06:00		23	108			0	0				
06:15		25	97			0	0				
06:30		31	86			0	0				
06:45		40	89	119	380	0	0	0	0	119	380
07:00		49	60			0	0				
07:15		54	76			0	0				
07:30		75	63			0	0				
07:45		72	66	250	265	0	0	0	0	250	265
08:00		63	56			0	0				
08:15		64	54			0	0				
08:30		52	50			0	0				
08:45		63	47	242	207	0	0	0	0	242	207
09:00		44	36			0	0				
09:15		47	37			0	0				
09:30		45	51			0	0				
09:45		41	46	177	170	0	0	0	0	177	170
10:00		39	28			0	0				
10:15		52	32			0	0				
10:30		33	22			0	0				
10:45		47	23	171	105	0	0	0	0	171	105
11:00		41	30			0	0				
11:15		44	23			0	0				
11:30		61	17			0	0				
11:45		60	23	206	93	0	0	0	0	206	93
Total		1354	3278			0	0			1354	3278
Percent		29.2%	70.8%			0.0%	0.0%			29.2%	70.8%
Grand Total		1354	3278			0	0			1354	3278
Percent		29.2%	70.8%			0.0%	0.0%			29.2%	70.8%

ADT Not Calculated

Site Code: 000024060082
Station ID:
Simpson Rd WB
East Of W. Lake Ave. Atl. GA
Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		14	40			0	0				
12:15		8	57			0	0				
12:30		8	56			0	0				
12:45		14	44	44	197	0	0	0	0	44	197
01:00		6	44			0	0				
01:15		5	57			0	0				
01:30		5	52			0	0				
01:45		3	44	19	197	0	0	0	0	19	197
02:00		11	63			0	0				
02:15		7	57			0	0				
02:30		7	54			0	0				
02:45		8	63	33	237	0	0	0	0	33	237
03:00		6	61			0	0				
03:15		9	68			0	0				
03:30		7	69			0	0				
03:45		3	78	25	276	0	0	0	0	25	276
04:00		3	93			0	0				
04:15		5	84			0	0				
04:30		7	108			0	0				
04:45		10	104	25	389	0	0	0	0	25	389
05:00		8	120			0	0				
05:15		9	110			0	0				
05:30		13	114			0	0				
05:45		13	92	43	436	0	0	0	0	43	436
06:00		20	85			0	0				
06:15		9	79			0	0				
06:30		25	63			0	0				
06:45		28	55	82	282	0	0	0	0	82	282
07:00		31	64			0	0				
07:15		37	61			0	0				
07:30		52	44			0	0				
07:45		55	44	175	213	0	0	0	0	175	213
08:00		52	52			0	0				
08:15		55	36			0	0				
08:30		41	43			0	0				
08:45		32	49	180	180	0	0	0	0	180	180
09:00		36	50			0	0				
09:15		30	47			0	0				
09:30		34	28			0	0				
09:45		31	32	131	157	0	0	0	0	131	157
10:00		21	37			0	0				
10:15		41	19			0	0				
10:30		29	19			0	0				
10:45		34	27	125	102	0	0	0	0	125	102
11:00		43	33			0	0				
11:15		43	21			0	0				
11:30		35	21			0	0				
11:45		47	22	168	97	0	0	0	0	168	97
Total		1050	2763			0	0			1050	2763
Percent		27.5%	72.5%			0.0%	0.0%			27.5%	72.5%
Grand Total		1050	2763			0	0			1050	2763
Percent		27.5%	72.5%			0.0%	0.0%			27.5%	72.5%

ADT Not Calculated

Site Code: 000024060081
Station ID:
Simpson Rd, EB
East Of W.Lake Ave, Atl GA
Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	35			0	0				
12:15		5	49			0	0				
12:30		8	48			0	0				
12:45		14	40	34	172	0	0	0	0	34	172
01:00		1	47			0	0				
01:15		3	52			0	0				
01:30		5	36			0	0				
01:45		1	52	10	187	0	0	0	0	10	187
02:00		5	55			0	0				
02:15		9	59			0	0				
02:30		5	54			0	0				
02:45		5	63	24	231	0	0	0	0	24	231
03:00		2	58			0	0				
03:15		9	61			0	0				
03:30		7	56			0	0				
03:45		6	73	24	248	0	0	0	0	24	248
04:00		4	65			0	0				
04:15		6	70			0	0				
04:30		5	61			0	0				
04:45		5	61	20	257	0	0	0	0	20	257
05:00		10	62			0	0				
05:15		13	69			0	0				
05:30		17	67			0	0				
05:45		14	59	54	257	0	0	0	0	54	257
06:00		22	51			0	0				
06:15		28	56			0	0				
06:30		42	55			0	0				
06:45		44	73	136	235	0	0	0	0	136	235
07:00		58	50			0	0				
07:15		71	74			0	0				
07:30		92	44			0	0				
07:45		93	51	314	219	0	0	0	0	314	219
08:00		92	35			0	0				
08:15		78	47			0	0				
08:30		77	35			0	0				
08:45		69	36	316	153	0	0	0	0	316	153
09:00		60	28			0	0				
09:15		59	32			0	0				
09:30		31	32			0	0				
09:45		43	35	193	127	0	0	0	0	193	127
10:00		46	19			0	0				
10:15		25	27			0	0				
10:30		36	27			0	0				
10:45		41	13	148	86	0	0	0	0	148	86
11:00		33	26			0	0				
11:15		37	25			0	0				
11:30		50	16			0	0				
11:45		39	17	159	84	0	0	0	0	159	84
Total		1432	2256			0	0			1432	2256
Percent		38.8%	61.2%			0.0%	0.0%			38.8%	61.2%
Grand Total		1432	2256			0	0			1432	2256
Percent		38.8%	61.2%			0.0%	0.0%			38.8%	61.2%

ADT Not Calculated

Site Code: 000024060072

Station ID:

Simpson St EB

West Of JL Blvd, Atl GA

Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		12	38			0	0				
12:15		8	56			0	0				
12:30		6	55			0	0				
12:45		7	50	33	199	0	0	0	0	33	199
01:00		4	39			0	0				
01:15		5	60			0	0				
01:30		4	53			0	0				
01:45		5	40	18	192	0	0	0	0	18	192
02:00		2	68			0	0				
02:15		4	42			0	0				
02:30		5	65			0	0				
02:45		3	55	14	230	0	0	0	0	14	230
03:00		3	40			0	0				
03:15		4	42			0	0				
03:30		9	44			0	0				
03:45		5	54	21	180	0	0	0	0	21	180
04:00		8	61			0	0				
04:15		5	62			0	0				
04:30		2	60			0	0				
04:45		6	55	21	238	0	0	0	0	21	238
05:00		10	53			0	0				
05:15		8	56			0	0				
05:30		12	61			0	0				
05:45		20	64	50	234	0	0	0	0	50	234
06:00		9	65			0	0				
06:15		16	54			0	0				
06:30		27	53			0	0				
06:45		35	48	87	220	0	0	0	0	87	220
07:00		42	44			0	0				
07:15		60	42			0	0				
07:30		71	47			0	0				
07:45		64	42	237	175	0	0	0	0	237	175
08:00		82	27			0	0				
08:15		68	40			0	0				
08:30		68	34			0	0				
08:45		61	35	279	136	0	0	0	0	279	136
09:00		49	36			0	0				
09:15		54	28			0	0				
09:30		45	30			0	0				
09:45		41	17	189	111	0	0	0	0	189	111
10:00		48	20			0	0				
10:15		39	20			0	0				
10:30		40	15			0	0				
10:45		44	19	171	74	0	0	0	0	171	74
11:00		38	20			0	0				
11:15		36	15			0	0				
11:30		51	11			0	0				
11:45		37	14	162	60	0	0	0	0	162	60
Total		1282	2049			0	0			1282	2049
Percent		38.5%	61.5%			0.0%	0.0%			38.5%	61.5%
Grand Total		1282	2049			0	0			1282	2049
Percent		38.5%	61.5%			0.0%	0.0%			38.5%	61.5%

ADT Not Calculated

Site Code: 000024060071

Station ID:

Simpson St WB

West Of JL Blvd, Atl GA

Latitude: 0' 0.000 Undefined

Start Time	22-Mar-06 Wed	Channel 1		Hour Totals		Channel 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	49			0	0				
12:15		8	55			0	0				
12:30		8	47			0	0				
12:45		7	56	33	207	0	0	0	0	33	207
01:00		11	55			0	0				
01:15		4	55			0	0				
01:30		5	50			0	0				
01:45		12	49	32	209	0	0	0	0	32	209
02:00		8	61			0	0				
02:15		7	67			0	0				
02:30		5	56			0	0				
02:45		9	59	29	243	0	0	0	0	29	243
03:00		4	46			0	0				
03:15		5	64			0	0				
03:30		8	59			0	0				
03:45		5	59	22	228	0	0	0	0	22	228
04:00		4	76			0	0				
04:15		5	91			0	0				
04:30		1	83			0	0				
04:45		7	81	17	331	0	0	0	0	17	331
05:00		1	112			0	0				
05:15		10	115			0	0				
05:30		6	105			0	0				
05:45		5	97	22	429	0	0	0	0	22	429
06:00		9	88			0	0				
06:15		7	72			0	0				
06:30		13	67			0	0				
06:45		16	60	45	287	0	0	0	0	45	287
07:00		31	51			0	0				
07:15		44	53			0	0				
07:30		46	42			0	0				
07:45		40	47	161	193	0	0	0	0	161	193
08:00		47	35			0	0				
08:15		32	31			0	0				
08:30		26	26			0	0				
08:45		27	31	132	123	0	0	0	0	132	123
09:00		31	26			0	0				
09:15		36	19			0	0				
09:30		33	14			0	0				
09:45		34	27	134	86	0	0	0	0	134	86
10:00		52	13			0	0				
10:15		36	12			0	0				
10:30		36	14			0	0				
10:45		32	21	156	60	0	0	0	0	156	60
11:00		35	16			0	0				
11:15		34	18			0	0				
11:30		34	14			0	0				
11:45		50	14	153	62	0	0	0	0	153	62
Total		936	2458			0	0			936	2458
Percent		27.6%	72.4%			0.0%	0.0%			27.6%	72.4%
Grand Total		936	2458			0	0			936	2458
Percent		27.6%	72.4%			0.0%	0.0%			27.6%	72.4%

ADT Not Calculated